(19)日本国特許庁（ＪＰ）　　　(12) 公 開 特 許 公 報 （A）　　　(11)特許出願公開番号

特開平8−56352

(43)公開日　平成 8 年(1996) 2 月27日

(51)Int.Cl.⁶		識別記号	庁内整理番号		P I		技術表示箇所
H 0 4 N	7/173						
G 0 6 F	13/00	3 5 5	7368−5E				
G 1 1 B	27/00		E	9463−5D			
					H 0 4 N	5/ 782	K
		9463−5D			G 1 1 B	27/ 00	E

審査請求　未請求　請求項の数9　OL　（全 11 頁）　最終頁に続く

| (21)出願番号	特願平6−189485	(71)出願人　000005821
		松下電器産業株式会社
(22)出願日	平成 6 年(1994) 8 月11日	大阪府門真市大字門真1006番地
		(72)発明者　堀上　陶吾
		大阪府門真市大字門真1006番地　松下電器
		産業株式会社内
		(72)発明者　財島　晋二
		大阪府門真市大字門真1006番地　松下電器
		産業株式会社内
		(72)発明者　佐藤　正樹
		大阪府門真市大字門真1006番地　松下電器
		産業株式会社内
		(74)代理人　弁理士　小堀治　明　（外2名）

(54)【発明の名称】　ビデオファイルサーバ及び録画制御装置

(57)【要約】

【目的】　ネットワーク上に複数の録画装置を分散配置し、共有するシステムにおいて、装置と録画物を共有するための管理機構と、制御・表示手段の提供を目的とする。

【構成】　映像を表示する複数のモニター14a〜nと、映像音声データを蓄積する複数の映像蓄積手段12a〜nを映像交換手段11上に分散配置し、またこれらを制御する蓄積制御部13とモニター制御部15と、録画物の管理情報を記憶する管理部16を電文伝送手段10で結び、利用者はモニター制御部15を用いて録画物の録画・再生要求を送り、管理部16の管理情報を元に蓄積手段12上の映像の再生・録画を行う。
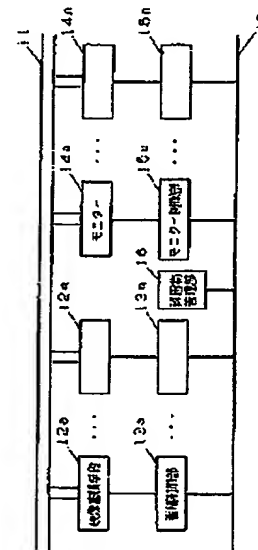
1

【特許請求の範囲】

【請求項1】　映像音声信号を伝送する映像交換手段と、映像音声データを蓄積する、前記映像交換手段に接続された少なくとも1つの映像蓄積手段と、前記映像蓄積手段を制御する蓄積制御手段と、前記映像蓄積手段に搭載する少なくとも1の録画媒体と、前記映像蓄積手段と前記録画媒体と前記録画媒体上の録画物の所在を管理する録画物管理手段と、前記映像交換手段に接続され、前記映像蓄積手段に蓄積された映像音声データを再生する少なくとも1つのモニターと、前記モニターを制御するモニター制御手段と、前記モニター制御手段と前記蓄積制御手段と前記録画物管理手段との間で電文の伝送を行う電文伝送手段からなるビデオファイルサーバ。

【請求項2】　録画物管理手段が、録画物と、前記録画物が存在する録画媒体と、前記録画媒体中の録画物の位置と、前記記憶媒体を搭載する映像蓄積手段との対応を前記録画物を特定する識別子に基づき管理し、モニター制御手段からの録画物の特定が前記識別子に基づき行われることを特徴とする請求項1記載のビデオファイルサーバ。

【請求項3】　モニター制御手段が、アクセスする映像蓄積手段に対する操作指示をモニター制御部から前記映像蓄積手段を制御する蓄積制御手段に直接送信することを特徴とする請求項1または請求項2のいずれかに記載のビデオファイルサーバ。

【請求項4】　録画の予約情報を記憶する予約記憶部と、前記予約記憶部に記憶された予約情報に基づき録画手段に録画実行を指示する録画実行指令手段と、録画要求に対し前記予約記憶部の予約情報の調整を行う予約調整手段とを備えた録画制御装置。

【請求項5】　通信回線を介して録画の依頼または依頼の受付を行う録画依頼部と、前記録画依頼部の通信先を記憶する記憶手段と、録画の依頼先の決定を制御する制御手段とを備え、前記制御手段が、予約調整部の調整結果に基づき前記録画依頼部へ録画の依頼を行い、前記録画依頼部からの録画依頼を前記予約調整部へ指示することを特徴とする請求項4記載の録画制御装置。

【請求項6】　予約記憶部が、録画後も録画実績を記憶することを特徴とする請求項4記載の録画制御装置。

【請求項7】　予約調整部が、通信回線を介して受け付けた録画依頼を実現する為に要する負担度を求め、録画依頼部が、通信回線を介して得られる負担度に基づき録画依頼を行う通信先を決定することを特徴とする請求項5または請求項6のいずれかに記載の録画制御装置。

【請求項8】　録画依頼部の通信先を記憶する記憶手段が、依頼先毎に録画依頼の内容を記憶することを特徴とする請求項5から請求項7のいずれかに記載の録画制御装置。

【請求項9】　複数の録画手段のうち少なくとも1つの録画手段が1もしくは複数の他の録画手段から映像音声

2

信号を入力し、予約調整手段が予約記憶をもとに依頼の録画を複製するスケジュールを計算し、録画実行指令手段が前記スケジュールをもとに前記録画手段に対して録画指示を出力することを特徴とする請求項7または請求項8のいずれかに記載の録画制御装置。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、テレビジョン放送、ケーブルテレビ、館内放送、CCTV、カラオケなどの映像音声信号をネットワーク上に分散配置された録画装置で録画し、また分散配置されたモニターから利用者がこれらの録画物と録画装置を共有して利用するビデオファイルサーバ及び録画制御装置に関するものである。

【0002】

【従来の技術】従来から図8に示すようにネットワーク上に録画物を蓄積、再生するビデオファイルサーバーを設置し、サーバー上の録画物を複数の利用者間で共有するという技術は存在する。これはセンター装置であるビデオファイルサーバー上の録画物を、視聴者端末から再生し、もしくは視聴者端末からの映像音声信号をサーバーに録画するといった装置である。

【0003】また、従来から図9に示すように電話回線を用いて、番組録画予約を行うVTRがある。このようなVTRは家庭などに設置され、電話回線と接続されており、利用者は例えば外出先の電話からトーン信号による遠隔操作によって、自宅のVTRに録画予約を行えるといったものである。

【0004】

【発明が解決しようとする課題】ところが、従来のビデオファイルサーバーは単一のセンター装置として実現され、複数の視聴者端末からの同時アクセスに耐えなければならず、高価で高性能なセンター装置を必要とする。また、単一のセンター装置であるために、システムを止めることなく利用者が自由に蓄積媒体をサーバーに搭載したり、新たに録画媒体を搭載することが困難であった。従来からある家庭用VTRなどの録画装置をネットワーク上に自由に分散配置し、これを利用者が共有できれば便利であろう。

【0005】また、いわゆる通信カラオケシステムにおいても、センター装置にカラオケ映像を蓄積し、これを端末に配信するという方法が採られているが、映像ソフトの供給源が1つのセンター装置に限られるという制約がある。複数の映像ソフト供給源があれば、利用者にとって映像の選択の幅が広がり、便利であろう。

【0006】また、従来の電話で操作できるVTRは単体で使用され、複数のVTRが互いに協調動作することはなかった。自宅で所有するVTRの数には限りがあり、放送時間が重なるために録画しきれない番組は、人手によって友人に録画依頼をし、手分けして録画するなどの方法がとられていた。また、自宅に複数のVTRが

3

あっても、どのVTRにどの番組を録画するかというスケジュール調整は人手で行っていたので、間違いが生じやすかった。

【0007】

【課題を解決するための手段】本発明は前記課題を解決するもので、本発明によるビデオファイルサーバーは映像音声データを表示もしくは拡声する複数のモニターと、利用者からの命令を入力し、前記モニターを制御するモニター制御手段と、映像音声データを蓄積する複数の映像蓄積手段と、前記映像蓄積手段を制御する蓄積制御手段と、前記映像蓄積手段に搭載する1もしくは複数の録画媒体と、前記映像蓄積手段と前記録画媒体と前記録画媒体上の録画物の所在を管理する録画物管理手段と、前記映像蓄積手段間もしくは前記モニターとの間で映像音声信号をやり取りする映像交換手段と、前記モニター制御手段と前記蓄積制御手段と前記録画物管理手段との間で電文のやり取りを行う電文伝送手段からなり、複数の録画装置と録画物を複数のモニターにおいて複数の利用者が共有できるものである。

【0008】また、本発明による録画制御装置は、通信回線を介して接続された他の録画制御装置の宛先を記憶する記憶手段と、前記記憶手段を参照し、他の録画制御装置に録画依頼を行い、あるいは前記の他の録画制御装置からの録画依頼を受け付ける録画依頼手段と、これから録画すべき番組等の情報を記憶する予約記憶手段と、前記予約記憶手段を参照して録画制御手段に接続された録画手段に録画実行を指示する録画実行指令手段と、番組録画要求を入力し、前記予約記憶手段を更新もしくは通信回線を介して接続された他の録画制御装置の録画依頼手段に録画要求を送る予約調整手段を有した構成である。

【0009】

【作用】上記構成によるビデオファイルサーバーは、モニター制御手段からの録画物へのアクセス要求が電文伝送手段により録画物管理手段に送られ、録画物管理手段は前記録画物の所在を表す情報を検索し、録画物の所在を表す電文を前記電文伝送手段により前記モニター制御手段に送り、モニター制御手段は前記の所在を表す情報を手がかりに、目的の録画物を搭載する映像蓄積手段とモニター間の映像接続を確立するように映像交換手段に要求信号を送り、また、蓄積制御手段に対して希望の録画物の再生などの操作命令を送る。

【0010】また、上記構成の録画制御装置は、録画予約要求を受け付け、予約調整手段は、すでに予約記憶手段に入っている予約を参照しながら、同一録画手段で時間重複がないように録画予約を割り当て、前記要求を処理しきれない場合は、録画依頼手段を通じて他の録画制御装置に要求を満たすべく依頼する。録画依頼手段は記憶手段を参照しながら他の録画制御装置に録画要求を行う。また、録画実行指令手段は予約記憶手段に従って、

4

録画手段に録画命令を送り、録画予約を実現する。

【0011】

【実施例】

（実施例1）以下本発明の一実施例について、図面を参照しながら説明する。図1において12a〜12nは映像と音声データを記録、蓄積、再生する映像蓄積手段で、例えば周知のVTRや光磁気ディスク装置のようにアナログ信号を蓄積する蓄積手段や、デジタル信号を入出力し蓄積するデジタルVTRやデジタル光磁気ディスク装置でもよく、さらにはレーザーディスクやCD−ROMのような再生専用の映像蓄積手段でもよい。

【0012】14a〜14nは前記映像蓄積手段の映像を表示し音声を拡声するモニターである。11は映像蓄積手段12a〜12nが出力する映像と音声信号を、他の映像蓄積手段12a〜12nやモニター14a〜14nに送る映像交換手段であり、同時に複数系統の映像を伝送できることが望ましく、例えばベースバンド映像音声信号を周波数分割多重方式によって伝送する映像交換手段、或いは周知のCODEC装置とISDN交換網からなる映像交換手段、或いはマトリクススイッチャーによる映像交換手段などである。

【0013】13a〜13nは対応する映像蓄積手段12a〜12nを制御する蓄積制御部で、15a〜15nは対応するモニター14a〜14nを制御するモニター制御部である。なお、1つの蓄積制御部13が複数の蓄積手段を制御してもよい。

【0014】16は映像蓄積手段12a〜12nに蓄積されている録画物を管理する録画物管理部で、録画物の名称と所在に関する情報を記憶・更新し、好ましくは、更新された日付、所有者、再生権、録画・消去権などの情報も記憶・更新することが望ましい。10は蓄積制御部13a〜13nとモニター制御部15a〜15nと録画物管理部16の間でやりとりされる電文を伝送する電文伝送手段で、例えば計算機LANや、ISDNなどの公衆網や、パケット交換網などであり、以下、単にLANと称す。

【0015】前記制御部13a〜13n、15a〜15nと管理部16は例えばワークステーション、パソコンやゲーム機などの計算機でもよい。なお、映像蓄積手段12a〜12nとモニター14a〜14nは、映像交換手段11上に分散配置されていればよく、その位置関係は自由である。同様に蓄積制御部13a〜13nと、録画物管理部16と、モニター制御部15a〜15nはLAN10上に分散配置されており、位置関係に制約はない。

【0016】録画物はビデオファイルという単位毎に管理されており、1つのビデオファイルは0〜複数の画像フレームからなり、例えばビデオテープや光ディスクのような録画媒体上に存在する。録画物管理部16はすべての前記ビデオファイルの所在を以下に説明するように

5

図3のビデオ管理テーブルに記憶する。

【0017】ビデオ管理テーブルは各ビデオファイルに一意のキーを割り当てて記憶し、各ビデオファイルの存在する媒体名と、その媒体中の区間を記憶する。媒体中の区間とは例えば媒体の先頭からフレーム番号を振ったときの何フレームから何フレームまでといった情報である。なお、このビデオ管理テーブルは媒体上の空き領域も同様に記憶している。

【0018】また、録画物管理部16はすべての映像蓄積手段12a〜12nと、各々の蓄積手段が搭載する記憶媒体名と装置の使用状態を記憶する図4に示す装置管理テーブルを持っている。

【0019】各モニターを制御するモニター制御部15a〜15nは各々図2に示すビデオ一覧表を記憶している。このビデオ一覧表は表を記憶するモニター制御部15からアクセスできるビデオファイルの一覧を記憶しており、ビデオファイルの名称とビデオファイルをアクセスする為のキーを対にして記憶している。

【0020】モニター制御部15毎に記憶しているビデオファイルの内容は異り、他のモニターの利用者が勝手に他利用者のビデオファイルにアクセスすることを防止できる。なお、このようなビデオ一覧表を録画物管理部16で記憶し、すべてのモニターから一覧表に載っているビデオファイルにアクセスできるように運用することも可能である。

【0021】前記構成について、以下にその動作を説明する。本実施例の分散録画装置の主な動作は映像音声データの再生、録画、コピー、消去動作で、他の動作としては、前記映像蓄積手段12が搭載する録画媒体、例えばVTRに挿入されているカセットを入れ替える動作、或いは映像蓄積手段12とその制御部13の登録・削除に関する動作があり、これらについて以下に説明する。

【0022】まずビデオファイルの再生について説明する。なお、以下で云う「エラー」が発生した場合は、好ましくはエラー発生要因を含んだ否定応答が返信されるものとする。

【0023】利用者が前記ビデオ一覧表の「StarWars」というビデオファイルを再生する場合を考える。利用者はモニター制御部15を用いて前記ビデオファイルを選択する。制御部15はビデオ一覧表を参照して該当ビデオファイルのキー、「OP3C2D2R」を得る。モニター制御部15は録画物管理部16に対してこのキーを含んだビデオファイルの「オープン電文」をLAN10経由で送信する。

【0024】録画物管理部16は前記オープン電文を受信し、記憶しているビデオ管理テーブルのキーと照合を行う。照合できない場合はエラーである。照合が成功した場合は、対応する媒体名を手がかりに、録画物管理部16に記憶している装置管理テーブルを参照し、該当する媒体を搭載している蓄積装置の装置アドレスと、装置

6

の使用状態を得る。ここで、装置が同時アクセス不能な装置で、使用中だった場合はエラーである。或いは、いずれの装置も目的の媒体を搭載してない場合はエラーである。

【0025】エラーでない場合は管理部16は要求のあったモニター制御部15に対して録画装置の装置アドレスと媒体内の区間を示すフレーム番号を含んだ「手がかり電文」を送信する。また、該当装置の使用状態を「再生中」にセットする。

【0026】モニター制御部15はエラーによる否定応答を受けた場合はこれをモニター14に表示し、再生動作を終了する。モニター制御部15は手がかり電文を受信すると、電文に記述される蓄積装置の蓄積制御部13に対して「再生電文」をLAN10経由で送信する。ここでいう「再生」とは、頭出し、早送り、巻き戻し、スロー再生、早送り再生、一時停止などの周知のビデオ再生命令を含む。ただし、モニター制御部15は、前記手がかり電文に含まれるビデオファイルの「区間」を逸脱しないように前記再生電文を送信する。これによってビデオファイル以外の領域にアクセスするのを防止し、例えば他の利用者のビデオファイルに不法にアクセスできないようにしている。

【0027】また、モニター制御部15は、最初の再生電文を送るに先立って、映像交換手段11に対して、目的の蓄積装置からの映像をモニターに伝送されるよう要求信号を送り、映像接続を確立しておく。蓄積制御部13はLAN10から送られてくる再生電文を受信し、映像蓄積手段12に対して適切な制御信号を送り、映像が再生される。再生映像は映像交換手段を介してモニター14に表示される。

【0028】利用者がビデオファイルの再生を辞めたい場合は、利用者は停止命令をモニター制御部15に入力する。モニター制御部15は再生を行っている装置の蓄積制御部13に対して「停止電文」を送信し、蓄積装置からモニターへの映像接続を切断するように映像交換手段11に要求信号を送り、録画物管理部16に対してビデオファイル名に対応する前記キーを含んだ「クローズ電文」を送信する。

【0029】前記停止電文を受信した蓄積制御部13は停止制御信号を映像蓄積手段12に送り、再生を止める。また、映像切断を要求する信号を受信した映像交換手段11は映像蓄積手段12からモニター14までの映像接続を切断する。

【0030】また、前記クローズ電文を受信した録画物管理部16は、オープン電文を受信したときと同様の動作で装置管理テーブルを参照し、装置の使用状態を「空き」状態にセットする。以上で再生動作が完結する。

【0031】なお、複数の使用者を許す装置の場合は、使用状態とともに使用者数を記憶し、オープン時に使用者数を1増やし、クローズ時に1減らすという動作を行

7

い．装置管理テーブルに許容できる使用者数も記憶して
おけば、許容度を越えた使用者数に装置がアクセスされ
ることを防げる．なお、モニター制御部15a～15n
間でビデオファイルのキー情報を交換しあうことによっ
て．他のモニターにおいても同一のビデオファイルにア
クセスすることができる。

【0032】また、録画物管理部16内にもビデオ一覧
表20を記憶しておき、ここにすべてのモニターで共有
したいビデオファイルを記憶すれば．これらのビデオフ
ァイルはすべての利用者からアクセスすることができ
る。

【0033】次にビデオファイル録画時の動作について
説明する。利用者はモニター制御部15にて録画を希望
するビデオファイルの長さと名前、さらに指定を行う場
合は媒体名も入力する。モニター制御部15は．録画物
管理部16に対して、ビデオファイルの長さと．指定が
ある場合は媒体名情報を含んだ「空白割り当て電文」を
送信する。

【0034】録画物管理部16は前記空白割り当て電文
を受信すると．ビデオ管理テーブルに記憶している空き
領域を参照し．要求の大きさを十分満たす領域を検索
し．検索に成功した場合は新規のキーを発行し．ビデオ
管理テーブルにビデオファイルとして登録する。また、
キーと、蓄積装置、媒体名．媒体中の区間情報を含んだ
電文をモニター制御部15に返信する。空き領域が検索
不能の場合はエラーである。

【0035】モニター制御部15は前記返信を受信する
と．このキーをビデオファイル名とともにビデオ一覧表
に登録する。媒体が蓄積装置に搭載されている場合は、
再生における動作と同様にして、映像交換手段11上の
他のビデオ装置．例えばビデオカメラなどと映像接続を
行い．録画をすることができる。

【0036】媒体が蓄積装置に搭載されてない場合、そ
の媒体に他の録画手段を用いて録画できる場合は．録画
物管理部16から送られてきた媒体中の区間情報を手が
かりに録画をすることができる。なお．空白割り当て電
文を送信するときに、必ず装置に搭載されている媒体を
割り当てるように要求できることが望ましい。

【0037】コピーの動作は、再生動作と録画動作を組
み合わせることで実施できる。後に説明する録画媒体の
交換の動作を併用して、希望する媒体間のコピーが可能
である。

【0038】なお、この動作例では再生電文や停止電文
などの蓄積手段を制御する為の電文は．モニター制御部
15から映像蓄積手段12へ直接伝送されたが．代わり
に一旦これらの電文を録画物管理部16に送出して、録
画物管理部16から蓄積手段12に対して蓄積手段12
を制御する為の電文を送出するという間接的な方法も考
えられる。しかし、前述の直接伝送する方が、録画物管
理部16への負荷を軽減できるので望ましい。

8

【0039】次にビデオファイルの消去について説明す
る．モニター制御手段15において消去したいビデオフ
ァイル名を入力する。モニター制御手段15は再生にお
けるオープン電文と同様にして、ビデオファイルを指す
キーを含んだ消去電文を作成し、録画物管理部16に送
信する。

【0040】前記消去電文を受信した録画物管理部16
はビデオ管理テーブルを参照し該当するビデオファイル
の登録を抹消し．空き領域として記憶する。

【0041】次に、蓄積装置が搭載する録画媒体の交換
における動作を説明する。登録済みの録画媒体を登録済
みの蓄積装置に搭載する場合、モニター制御部15は利
用者が入力する媒体名と装置アドレスを含んだ「搭載電
文」を作成し．録画物管理部16に送信する。録画物管
理部16は前記搭載電文の媒体の装置への搭載関係を装
置管理テーブルに反映させる。

【0042】次に、新しい録画媒体を登録する動作を説
明する。登録する媒体名．長さ、ベータかVHSかなど
の方式の種別を含んだ「媒体登録電文」をモニター制御
部15で作成し．これを録画物管理部16に送信し、録
画物管理管理部16は前記媒体登録電文を受信し、ビデ
オ管理テーブルに空き領域として記憶する。同様にして
媒体の登録抹消を行うことができる。この場合．媒体上
のビデオファイルの管理情報は破棄されるので．これら
のビデオファイルはアクセス不能となる。

【0043】次に、新しい蓄積手段を登録する動作を説
明する。新規媒体登録時と同様にして．種別と蓄積装置
のアドレスを含んだ蓄積装置登録電文を録画物管理部1
6に送り、これを受信した録画物管理部16は装置管理
テーブルに新しい装置を登録する。

【0044】以上のようにして、分散配置された各々の
モニターから分散配置された複数の映像蓄積手段の映像
をアクセスできる分散録画装置が実現される。

【0045】なお、映像音声信号の録画再生として説明
しているが、同様にして音声信号をネットワーク上に分
散配置された録音装置に蓄積し、モニターにて再生する
構成や、あるいは静止画を分散配置された蓄積手段に蓄
積し、これをモニターにて表示する構成、あるいはこれ
らを組み合わせた構成などは本発明から容易に類推でき
る。

【0046】（実施例2）本発明の第2の実施例につい
て説明する。第2の実施例は家庭用ビデオ録画装置を対
象としたものである。図5において、50は自宅．51
は友人宅である。なお、「自宅」「友人宅」という表現
は説明の便宜上の呼称であって、発明の実施形態はこれ
に限定されない。自宅50．友人宅51は地上波あるい
は衛星放送受信アンテナ55を備え．1または複数の周
知の家庭用VTR52を備えており．これらのVTRは
以下に説明する本発明の制御手段53a、53bにより
制御されている。

9

【0047】自宅50の制御手段53aと友人宅51の制御手段53bは例えば公衆電話網54に接続されており、以下に説明するように、お互いに通信できるようになっている。

【0048】制御手段53の構成を図6を用いて説明する。67はリモコンで、使用者が制御手段53に指令を送るのに用いられる。65はリモコン受光部で、リモコン67からの指令はここで受信され、CPU61に届く。61はリモコンからの指令により、予約調整部69、録画依頼部70、電話帳64を制御するCPUである。

【0049】69はリモコン67もしくは録画依頼部70からCPU61経由で入力された新たなタイマー録画予約要求と、予約記憶部63に登録済みのタイマー録画予約を比較して、タイマー録画テーブルの予約を計画・設定する予約調整部である。

【0050】70は、リモコン67や予約調整部69からの録画依頼要求を受けて、電話帳64を参照して電話I/F62経由で友人宅51宛に後送する録画依頼電文を出力し、または同様にして友人宅51から送られてきた録画依頼電文を受信し、CPU61経由で予約調整部69にタイマー録画要求を出力する録画依頼部である。

【0051】62は録画依頼部70が電話網経由で電文をやりとりするための電話I/F部で、例えば周知の電話用モデムである。63は番組録画の予約内容を記憶する予約記憶部で、録画時間、チャンネル、どのVTRに録画するか、録画モードを記憶する。68は予約記憶部63と、時計71から得られる時刻と予約内容に従って接続されているVTR52に録画開始、録画終了などの制御信号を出力する録画実行指令部である。

【0052】なお、前記録画実行指令部68は接続されているVTR52に挿入されているテープの録画可能な残量、品質を探知できることが望ましいが、テープを挿入した時に、その旨リモコン67で申告してもよく、この情報を予約記憶部63において記憶し、録画予約を設定する際に参照できるようにしておくことが望ましい。

【0053】なお、VTR52は地上波や衛星放送以外にも、ケーブルテレビや館内放送にも接続できる。また、制御手段53からVTRへの制御信号の伝送は制御線を用いる他に例えば赤外線リモコン信号や計算機LANを用いてもよい。

【0054】なお、電話帳64への電話番号の登録の仕方として、登録毎に優先順位をつけて記憶しておくことが望ましい。また、予約調整部69はVTR毎の特長、例えばいわゆる衛星放送を受信できるか否か、プレミアム放送のデコーダを備えているかどうかといった情報を記憶していることが望ましい。

【0055】また、ここに友人宅のVTRの特性も記憶しておき、録画依頼を行う際に参照することも可能である。また、VTRの他に録画手段としては光磁気ディス

10

ク装置、ディジタルVTR、動画を蓄積・再生可能なパソコンなどでもよい。

【0056】また、本実施例では、制御手段53同士の通信は電話網54を用いたが、電話網54の代わりに例えば計算機LANを用いることも可能である。この場合、録画依頼をする際にLANのブロードキャスト機能を用いて同時に複数の友人宅に録画依頼を行うことが可能となり、より高速な録画依頼を行うことができる。

【0057】前記構成について、以下にその動作を説明する。自宅50において、リモコン67を用いて制御手段53に対して番組録画予約を行う。従来ののVTRの番組予約と異なるのは、予約する番組が時間的に重複していても構わない点である。

【0058】CPU61は番組録画予約要求を受信すると、これを予約調整部69に送る。予約調整部69は予約記憶部63を参照し、予約可能なVTRに録画要求を割り振り、これを予約記憶部63に登録する。予約可能なVTRに任意性がある場合、表示部66にその旨表示して、リモコン67を用いてどのVTRに録画するかを指示でき、指示なき場合は自動的に割り振られるのが望ましい。

【0059】また、通常時は予約記憶部63の予約内容を表示部66に表示しておくことが望ましい。また、予約調整部69がVTRの性能を記憶し、録画予約を割り当てるときに高性能なVTRを優先的に割り当てるという動作も可能である。

【0060】以上のようにして、録画予約を入れていくと、やがて例えば図7に示した通り、番組A～Cに加えて、さらに番組Dを録画予約することができなくなる事態が発生する。ところが、図7をよく観察すると、VTR毎の録画割り当てを変更することであらたに番組Dの予約を入れることができることに注意されたい。

【0061】例えば番組Aの録画動作中において番組Dの録画予約の要求があった場合、VTR1が録画中の番組Aを中断することは望ましくないので、予約調整部69は、まだ録画開始していない番組BをVTR1に割り振り、番組CをVTR2に割り振ることで、VTR2に番組Dの予約を割り当てる。

【0062】しかし、予約調整部において以上の動作を以てしても満たしきれない番組予約要求が発生した場合、以下の動作に従って友人宅51のVTRに録画の依頼を自動的に行うことになる。

【0063】予約調整部69はCPU61を介して録画依頼部70に、友人宅に録画依頼するよう指令する。自宅50の制御手段53aの電話帳64には、友人宅51を含む複数の友人宅の電話番号と、望ましくはパスワードとサブアドレスがあらかじめリモコン67を用いて登録してある。録画依頼部70は電話帳64を参照し、優先順位のもっとも高い友人宅51を検索し、電話I/Fを介して友人宅51に電話する。

11

【0064】友人宅51の制御手段53bはあらかじめ設定してある発呼回数を越えると自動的に応答し、応答した証として応答信号を制御手段53aに対して送信する。なお、電話回線としてISDN網を用いている場合は、録画装置を特定するサブアドレスを付けて発呼することで、友人宅の録画装置を特定して呼び出すことができる。

【0065】自宅の制御手段53aは友人宅の制御手段53bからの応答を確認すると、制御手段53bに対して、自宅の電話番号と、望ましくはあらかじめ取り決めたパスワードを送信する。

【0066】友人宅の制御手段53bの録画依頼部は電話帳を参照し前記電話番号とパスワードを照合する。照合に失敗した場合は、不法アクセスと判断し、否定応答信号を自宅制御手段53aに送信し、電話回線を切断する。友人宅の制御手段53bにおいて前記不法アクセスが発生したことを記憶し、表示部66に表示することも可能である。照合に成功した場合は自宅50の制御手段53aからのアクセスを許可するものとし、自宅の制御手段53aに対して正常応答信号を送信する。

【0067】自宅の制御手段53aの録画依頼部70は前記の正常応答信号を受信すると、以下の録画依頼を行う。否定応答信号を受信した場合は警告メッセージを表示部66に表示し、電話帳64で次に優先順位の高い友人宅を検索し、依頼動作を繰り返す。

【0068】自宅の制御手段53aの録画依頼部70は録画依頼する番組の時間情報とチャンネル情報と、望ましくは録画品質情報を含んだ録画依頼電文を友人宅51の制御手段53bに送信する。

【0069】友人宅の制御手段53bは前記電文を受信し、その録画要求を予約調整部69に送る。予約調整部69は、自宅50の制御手段53aが行った前述と同様の動作で、録画要求を満たそうとする。満たすことが可能な場合は、正常応答を自宅50に送信し、不可能な場合は否定応答を送信する。

【0070】自宅50の制御手段53aは前記動作によって正常応答を受信した場合はその旨表示部66に表示し、電話を切断する。否定応答を受信した場合は、電話帳64で次に優先順位の高い友人宅を検索し、録画依頼動作を繰り返す。なお、電話帳64に登録してある友人宅すべてに依頼しても、録画依頼が受理されなかった場合は、該当番組は録画依頼できないことになり、その旨表示部66に表示する。

【0071】以上のようにして、時間が重複する番組を分散的に録画することによって、従来のように独立単体で使用するVTRでは録画しきれなかった番組を自動的に録画可能となった。

【0072】なお、前述のように電話網54の代わりに計算機LANを用いる場合、電話帳64は電話番号の代わりにアドレス記憶する。友人宅に録画依頼をする際

12

は、特定の友人宅に各々依頼するより、好ましくはLAN上の限定された友人宅のグループ、もしくはLAN上の友人宅すべてに対して録画依頼をブロードキャストし、返信された電文を参照して、好ましくは前記負担度を参照し、適切な友人宅に録画依頼の確定を行うという動作を行う。これによって、電話網を用いた場合よりも少ない依頼回数で録画依頼ができる。

【0073】なお、VTRを再生用途で利用中に自動的に予約が入ってしまうのは困るので、望ましくはVTRの再生状態を録画実行指令部68が検知して再生中のVTRに録画予約を割り当てるときはアラームを表示部66に表示したり、アラーム音を発するようにすると便利である。

【0074】以上のようにして予約記憶部63に予約された番組は、時計71によるタイマー動作により、録画実行指令部68によりVTR52に制御信号が送られることで録画が実行される。

【0075】このように、従来は独立単体で動作していた複数のVTRを本発明の制御手段を用いて協調動作させることで、限られた台数のVTRを有効利用し、番組録画能力を高めることができる。

【0076】なお、前記構成要素のうち電話帳64、録画依頼部70、電話I/F62を欠いても、友人宅への録画依頼はできなくなるものの、本発明を用いることで自宅のVTR52a～52nの複数のVTRを協調動作させ、VTRを有効利用することができることは言うまでもない。

【0077】（実施例3）第2の実施例に加えて、タイマー録画実行後もこの予約を消去せず、これを録画履歴として記憶容量が許す限り予約記憶部63に記憶した場合について説明する。

【0078】この場合の動作として、録画予約の特殊な場合として、リモコン67により過去の番組に対する録画要求を指令し、自宅の制御手段53aにて録画履歴があれば、これを表示部66に表示し、該当番組の録画物が自宅に存在する可能性を示すことができ、自宅50の録画履歴になければ、録画依頼と同様の動作で友人宅51に対して録画履歴の問い合わせを行うことができる。

【0079】もし、友人宅において該当番組の録画履歴が存在すれば、その旨通知を受けることで、友人宅51から該当番組の録画物を提供してもらえる可能性があることがわかる。すなわち、録画依頼と同様にして録画履歴の問い合わせをすることで、自動的に該当番組を録画した友人宅のリストを得ることができ、過去の番組に関しても目的の番組を入手できる可能性を広げることができる。

【0080】なお、公知のバーコードを用いて録画物を管理するVTRの録画物管理機構を用い、録画履歴と録画物のバーコードの対応をあわせて記憶することで、該当番組を消去してしまったかどうかを応答することがで

13

きる。

【００８１】（実施例４）第２の実施例に加えて．友人宅５１において録画依頼を受理する際に、単に正常応答を送信する代わりに、以下に説明する「負担度」を求める予約調整部を備え、これを手がかりに録画依頼をやり取りする録画依頼部を備えた本発明の分散録画装置の一実施例について説明する。

【００８２】「負担度」とは、自宅５０からの録画要求を実現するために友人宅５１にかかる負担度である。そもそも録画要求の内容を含む録画が友人宅５１に設定してあった場合．友人宅５１において設定変更は必要ないので．負担度０となる。録画要求を満たすのに．録画割り当ての変更を必要としない場合は負担度１、録画の割り当ての変更によって要求を満たせる場合は負担度２であり．その値は予約調整部６９で求められる。なお、１つの番組に対して大勢からの録画依頼があった場合は、後にテープを友人に貸す手間を加味して負担度を高く評価するとよい。

【００８３】以上のようにして負担度を通知された自宅５０の制御手段５３ａの録画依頼部は．負担度に応じて．録画依頼を確定するか．別の友人宅に録画依頼をするかを選択できる。これによって友人宅にかかる負担を配慮した録画依頼を行うことができ．より少ない負担で録画装置の協調動作を行える。

（実施例５）第４の実施例に加えて．録画依頼を受けたときに、録画依頼主と、録画内容や、望ましくは負担度を予約記憶部６３もしくは電話帳６４に記憶する分散録画装置の実施例を説明する。

【００８４】予約記憶部６３においてＶＴＲ毎もしくは録画番組毎に録画依頼主を記憶する。例えば録画終了後にＶＴＲからテープを取り出したときに、そのテープに録画されている番組を依頼した依頼主のリストを表示部６６に表示する。

【００８５】以上の動作により、ＶＴＲに入っていたテープを貸すべき依頼主のリストを得ることができ．テープを貸すのに便利になる。

【００８６】また、電話帳６４において依頼主毎に録画依頼を記憶し．ＣＰＵ６１で定期的に前記録画依頼を集計し、依頼の量を望ましくは負担度を加味して計算し、その結果を表示部６６に表示する動作も可能である。

【００８７】このような動作によって．依頼主に対して．録画依頼の量と負担度に応じて．報償を要求することができる。

（実施例６）第５の実施例に加えて．ＶＴＲ５２ａ～５２ｎのうち少なくとも１台が、他のＶＴＲからのベースバンド映像・音声信号を入力し、録画実行指令部からの指令により他のＶＴＲからの映像音声を選択して録画できる構成について説明する。なお、前記録画用ＶＴＲを以下マスターＶＴＲと称する。

【００８８】このような構成によって．以下に説明する

14

ように、録画依頼主に貸し渡す為の貸し出しテープをダビング編集することにより作成できる。

【００８９】リモコン６７によりどの依頼主の貸し出しテープを作成するかＣＰＵ６１に入力する。ＣＰＵ６１は予約調整部６９に対し前記依頼主の貸し出しテープ作成を行うスケジュールを組み立てるように指示する。予約調整部６９は、予約記憶部６３を参照し、貸し出しテープ作成作業をスケジューリングする。

【００９０】録画依頼主の依頼した番組は複数のＶＴＲにまたがって存在しており．これをマスターＶＴＲにダビングするのだが、このダビング作業によって影響を受けるＶＴＲの録画予約と衝突してはならない。このような衝突が発生しないかどうかチェックしながらスケジューリングを行う。特にマスターＶＴＲに入っていた録画予約は可能な限り他のＶＴＲに割り当てて、ダビング作業に集中的に用いるとことが望ましい。なお．ダビング作業をするゆとりが無い場合はその旨表示部６６に表示する。

【００９１】スケジューリングに成功した場合はその旨表示部６６に表示し、さらに貸し出しテープとなるテープをマスターＶＴＲにセットするよう表示する。テープをセットしたら．リモコン６７により作成スタートを指示する。

【００９２】ダビングのスケジュールは前記スケジューリング動作により予約記憶部６３に記憶され、録画実行指令部６８はスケジュールに従ってＶＴＲに再生と再生指示とマスターＶＴＲに録画とＶＴＲ選択の指示を送る。

【００９３】なお、マスターＶＴＲにもともと入っていたテープ上の録画物をダビングする必要が生じることがある。この場合．このテープをダビングする為には他のＶＴＲにセットし直す必要があり、表示部６６にテープ入れ替えの指示を表示し．人手でテープを入れ替える。このような作業は面倒なので、ダビングをする場合は、依頼による録画をできるだけマスターＶＴＲで行わないようにスケジューリングをするのが望ましい。

【００９４】また、自分は録画するのが不要で．友人からの録画依頼で録画をする番組ならば、はじめから貸し出しテープ上に録画すると良い。こうすることでダビングの手間も省け．ダビングによる画質劣化も避けられる。

【００９５】以上のようにして録画依頼主専用の貸し出しテープを作成し、貸し出しもしくは譲渡することで、専用テープを作成しない場合に比べて．貸し出し中にそのテープを鑑賞できないといった不便や、テープ中の依頼外の番組まで貸し出してしまうという不便から解放される。

【００９６】なお、自宅と友人宅との間に映像音声信号を伝送する映像交換手段がある場合は．録画依頼された番組を録画後に前記伝送手段を通じて友人宅に伝送で

15

き，テープを貸し出すといった手間が省け，より望まし
い結果が得られることは言うまでもない。

【0097】

【発明の効果】以上のようにして，複数の録画装置をネ
ットワーク上に分散配置し，これらを協調的に動作させ
る機構を設けることにより，これらの録画装置と録画物
を複数の利用者間で共有して利用できる装置を提供でき
る。

【図面の簡単な説明】

【図1】本発明の第1の実施例における分散録画装置の
構成図

【図2】本発明の分散録画装置が保持するビデオ一覧表
の概念図

【図3】本発明の分散録画装置が保持するビデオ管理テ
ーブルの概念図

【図4】本発明の分散録画装置が保持する装置管理テー
ブルの概念図

【図5】本発明の第2の実施例における分散録画装置の
利用形態図

【図6】本発明の第2の実施例における分散録画装置の
構成図

【図7】本発明の第2の実施例における予約調整の様子
を示す概念図

【図8】従来のネットワーク型録画装置の構成図

【図9】従来の遠隔操作VTRの構成図

【符号の説明】

10　電文伝送手段
11　映像交換手段
12a　映像蓄積手段
12n　映像蓄積手段
13a　蓄積制御部
13b　蓄積制御部

16

＊14a　モニター
14n　モニター
15a　モニター制御部
15b　モニター制御部
16　録画物管理部
50　自宅
51　友人宅
52　VTR
53a　分散録画装置
53b　分散録画装置
54　公衆電話網
55　受信アンテナ
61　CPU
62　電話I／F
63　予約記憶部
64　電話帳
65　受光部
66　表示部
67　リモコン
68　録画実行指令部
69　予約調整部
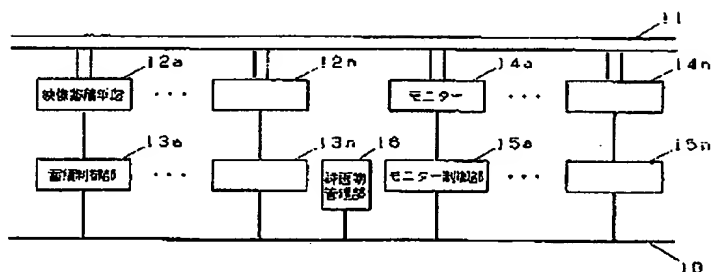70　録画依頼部
71　時計
80　ビデオファイルサーバー
81　蓄積手段
82a　表示端末
82n　表示端末
90　公衆網
91a　電話
91n　電話
92a　VTR
＊92b　VTR

【図1】

(10)　　　　　　　　　　　特開平8－56352

【図2】

ビデオ一覧表

名称	キー
Star Wars	OP3C2D2R
Jurassic Park	ADOVDO3DO
⋮	⋮

【図3】

ビデオ管理テーブル

V1

キー	媒体名	アドレス
OP3C2D2R	テープ3	9000~230000
ADOVDO3DO	ディスク2	0~1
⋮	⋮	⋮

【図4】

装置管理テーブル

V2

装置アドレス	媒体名	使用状態
VTR001	<空>	<空>
LASER001	ディスク2	再生中
VTR002	テープ3	再生中
⋮	⋮	⋮

【図8】

80　ビデオファイルサーバー　81

表示端末 82a ・・・ 表示端末 82n

【図5】

自宅

55　50　VTR　VTR　C　52　53a

友人宅

55　51　VTR　C　53b

電話網　54

【図7】

VTR1　番組A　番組C
VTR2　番組B
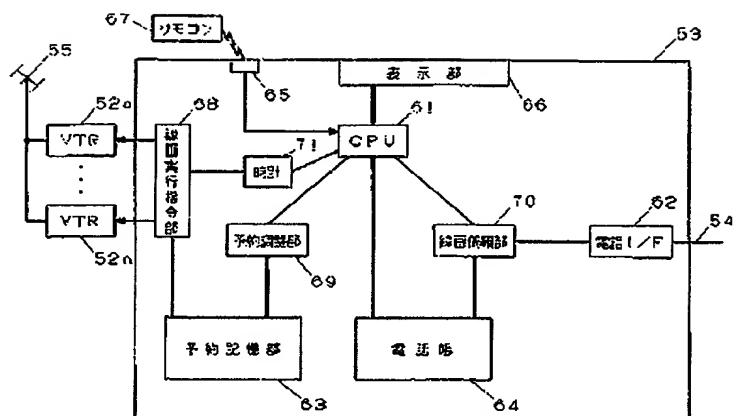
↓

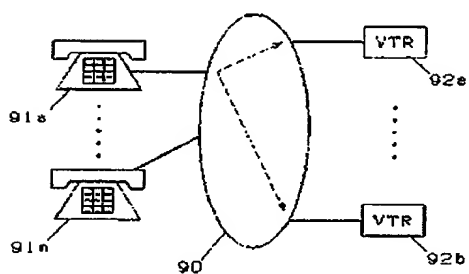VTR1　番組A　番組B
VTR2　番組D　番組C
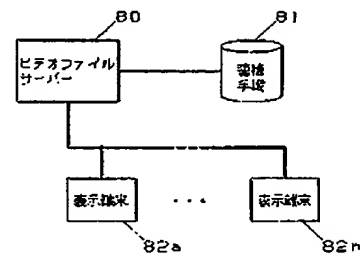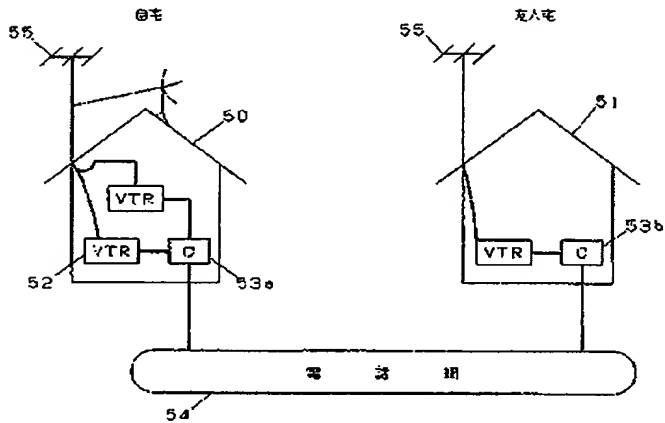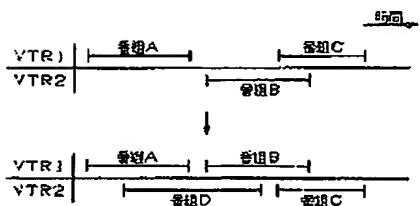
(11)　　　　　　特開平8−56352

【図6】

【図9】

フロントページの続き

(51)Int.Cl.⁶　　　　識別記号　　庁内整理番号　　　FI　　　　　　　　　　技術表示箇所
　　H04N　　5/765

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 08-056352

(43)Date of publication of application : 27.02.1996

(51)Int.Cl.

HO4N 7/173
G06F 13/00
G11B 27/00
HO4N 5/765

(21)Application number : 06-189485

(22)Date of filing : 11.08.1994

(71)Applicant : MATSUSHITA ELECTRIC IND CO LTD

(72)Inventor : HORIGAMI SHUGO
NOJIMA SHINJI
SATO MASAKI

(54) VIDEO FILE SERVER AND VIDEO RECORDING CONTROLLER

(57)Abstract:

PURPOSE: To obtain a management mechanism and a control and display means for sharing video recording bodies with video recording devices in a system wherein the video recording devices are decentralized and arranged in a network and are shared.

CONSTITUTION: Plural monitors 14a-14n which display images and plural video storage means 12a-12n which store video and audio data are decentralized and arranged on a video switching means 11. Further, a storage control part 13 and a monitor control part 15 which control them and a management part 16 which stores management information on the video recording bodies are connected by a message transmitting means 10, and a user sends a video recording/reproduction request for a video recording body by using the monitor control part 15 to reproduce or record images on the storage means 12 based on the management information.
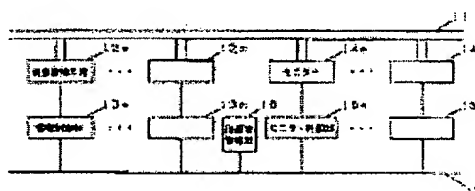
(19)**Publication country**Japan Patent Office (JP)
(12)**Kind of official gazette**Publication of patent applications (A)
(11)**Publication No.**JP,8-56352,A
(43)**Date of Publication**Heisei 8(1996) (1996) February 27
(54)**Title of the Invention**A video-file server and a recording controller
(51)**International Patent Classification (6th Edition)**
H04N 7/173

G06F 13/00 355 7368-5E

G11B 27/00 E 9463-5D

H04N 5/765

FI
H04N 5/782 K

G11B 27/00 E 9463-5D

Request for Examination Unrequested
The number of claims 9
Mode of ApplicationOL
Number of Pages11
(21)**Application number**Japanese Patent Application No. 6-189485
(22)**Filing date**Heisei 6(1994) (1994) August 11

(71)**Applicant**
Identification Number000005821
NameMatsushita Electric Industrial Co., Ltd.
Address1006, Kadoma, Kadoma-shi, Osaka
(72)**Inventor(s)**
NameShugo Horigami
Address1006, Kadoma, Kadoma-shi, Osaka Inside of Matsushita Electric Industrial Co., Ltd.
(72)**Inventor(s)**
NameShinji Nojima
Address1006, Kadoma, Kadoma-shi, Osaka Inside of Matsushita Electric Industrial Co., Ltd.
(72)**Inventor(s)**
NameMasaki Sato
Address1006, Kadoma, Kadoma-shi, Osaka Inside of Matsushita Electric Industrial Co., Ltd.
(74)**Attorney**
Patent Attorney
NameSmallness Kaji ** (and 2 others)

(57) **Abstract**
Objects of the Invention Two or more recording devices are distributed on a network, and it aims at the control mechanism for sharing a device and visual recording, and offer of control and a displaying means in the system to share.

Elements of the Invention The storage controlling part 13 and the monitor control section 15 which distribute two or more monitor 14 a-n which displays an image, and two or more video storage means 12 a-n which stores video voice data on the image means of exchange 11, and control these, Connecting with the wording-of-a-telegram transmission means 10 the Management Department 16 which memorizes management information of visual recording, a user leads recording and a reproduction request of visual recording using the monitor control section 15, and performs playback and recording of an image on the accumulation means 12 based on management information of the Management Department 16.

Claim(s)
Claim 1 An image means of exchange which transmits a video voice signal, and at least one video storage means which store video voice data and which was connected to said image means of exchange, A storage control means which controls said video storage means, and a recording medium of at least 1 carried in said video storage means, A visual recording management tool which manages the whereabouts of visual recording on said video storage means, said recording medium, and said recording medium, At least one monitor which reproduces video voice data which was connected to said image means of exchange, and was stored in said video storage means, A video-file server which consists of a wording-of-a-telegram transmission means which transmits wording of a telegram between a monitor control means which controls said monitor, and said monitor control means, said storage control means and said visual recording management tool.
Claim 2A recording medium with which visual recording and said visual recording exist in a visual recording management tool, and a position of visual recording in said recording medium, The video-file server according to claim 1, wherein it manages correspondence with a video storage means which carries said storage based on an identifier which specifies said visual recording and specification of visual recording from a monitor control means is performed based on said identifier.
Claim 3 Claim 1, wherein a monitor control means transmits operator guidance to a video storage means to access to a storage control means which controls said video storage means from a monitor control section directly, or a video-file server given in either of Claim 2.
Claim 4A recording controller comprising:
A request-to-print-out-files storage parts store which memorizes reserved information of recording.
A recording execution commanding means which directs recording execution to a recording means based on reserved information memorized by said request-to-print-out-files storage parts store.
A request-to-print-out-files adjustment device which adjusts reserved information of said request-to-print-out-files storage parts store to a recording demand.

Claim 5 The recording controller according to claim 4 with which it has the following, and said control means requests recording to said recording request part based on an adjustment result of a request-to-print-out-files controller, and is characterized by directing a recording request from said recording request part to said request-to-print-out-files controller.
A recording request part which performs reception of a request of recording or a request via a communication line.
A memory measure which memorizes a communication destination of said recording request part.
A control means which controls determination of a trustee of recording.

Claim 6 The recording controller according to claim 4 with which a request-to-print-out-files storage parts store is characterized by after recording memorizing a recording track

record.

Claim 7A recording controller given in either Claim 5 determining a communication destination which asks for the degree of burden required in order that a request-to-print-out-files controller may realize a recording request received via a communication line, and where a recording request part performs a recording request based on the degree of burden obtained via a communication line, or Claim 6.

Claim 8 The recording controller according to any one of claims 5 to 7 with which a memory measure which memorizes a communication destination of a recording request part is characterized by memorizing the contents of the recording request to every trustee.

Claim 9 At least one recording means inputs a video voice signal from 1 or two or more of other recording means among two or more recording means, A recording controller given in either Claim 7, wherein it calculates a schedule whose request-to-print-out-files adjustment device reproduces recording of a request based on request-to-print-out-files memory and a recording execution commanding means outputs recording directions to said recording means based on said schedule, or Claim 8.

Detailed Description of the Invention
0001
Industrial Application This invention Television broadcasting, cable TV, broadcast inside a hall, CCTV, It is related with the video-file server and recording controller which record video voice signals, such as karaoke, with the recording device distributed on the network and with which a user shares and uses these visual recording and recording devices from the distributed monitor.
0002
Description of the Prior Art Installing on a network the video-file server which accumulates visual recording and is reincarnated, as shown in drawing 8 from the former, the art of sharing the visual recording on a server among two or more users exists. This is the device of playing the visual recording on the video-file server which is a center device from a viewer terminal, or recording the video voice signal from a viewer terminal on a server.

0003 As shown in drawing 9 from the former, there is VTR which performs a program recording request to print out files using a telephone line. Such VTR is installed in a home etc., it is connected with the telephone line, and a user used to say that he can perform reservation of picture recording on VTR of a house by remote control by a tone signal from the telephone of a place where one has gone.
0004
Problem(s) to be Solved by the Invention However, it realizes as a single center device, and the conventional video-file server must be equal to the concurrent access from two or more viewer terminals, and needs an expensive and highly efficient center device. Since it was a single center device, it was difficult for a user to carry a storage medium in a server freely, without stopping a system, or to newly carry a recording medium. It will be convenient, if recording devices, such as a certain home VTR, are freely distributed on a network from the former and a user can share this.

0005 Also in what is called a communication karaoke system, although a karaoke picture is accumulated in a center device and the method of distributing this to a terminal is taken, there are restrictions that the supply source of image software is restricted to one center device. If there are two or more image soft supply sources, for a user, the width of selection of an image will spread and it will be convenient.

0006VTR which can be operated by conventional telephone was used alone, and two or more VTRs did not carry out coordination operation mutually. The method of the program which cannot be recorded since there is a limitation in the number of VTRs owned at a house and broadcasting hours lap carrying out a recording request to a friend by a help, and recording by work sharing was taken. Since schedule control which program to record on which VTR was performed with the help even if two or more VTRs were in the

house, it was easy to produce a mistake.
0007
Means for Solving the Problem This invention solves said SUBJECT and a video-file server by this invention video voice data A display or two or more monitors which carry out sound-reinforcement, A monitor control means which inputs a command from a user and controls said monitor, Two or more video storage means which store video voice data, and a storage control means which controls said video storage means, A visual recording management tool which manages the whereabouts of visual recording on 1 or two or more recording media which are carried in said video storage means, said video storage means and said recording medium, and said recording medium, An image means of exchange which exchanges a video voice signal between said video storage means or between said monitors, Between said monitor control means, said storage control means, and said visual recording management tool, it consists of a wording-of-a-telegram transmission means which exchanges wording of a telegram, and two or more users can share two or more recording devices and visual recording in two or more monitors.
0008A memory measure which memorizes an address of other recording controllers to which a recording controller by this invention was connected via a communication line, A recording request means which performs a recording request to other recording controllers, or receives a recording request from other aforementioned recording controllers with reference to said memory measure, A reservation storage means which memorizes information, including a program etc. which should be recorded from now on, and a recording execution commanding means which directs recording execution to a recording means connected to a recording control means with reference to said reservation storage means, It is composition with a request-to-print-out-files adjustment device which sends a recording demand to a recording request means of other recording controllers to which a program recording demand was inputted into and said reservation storage means was connected via updating or a communication line.
0009
FunctionFor the video-file server by the above-mentioned composition, the access request to the visual recording from a monitor control means is sent to a visual recording management tool by a wording-of-a-telegram transmission means, A visual recording management tool retrieves the information showing the whereabouts of said visual recording, and the wording of a telegram showing the whereabouts of visual recording is sent to said monitor control means by said wording-of-a-telegram transmission means, A monitor control means sends a requirement signal to an image means of exchange so that the image connection between the video storage means and monitor which carry the target visual recording for the information showing the aforementioned whereabouts in a key may be established, and it sends operating instructions, such as reproduction of the visual recording of hope, to a storage control means.
0010 Receive the recording controller of the above-mentioned composition and a reservation-of-picture-recording demand a request-to-print-out-files adjustment device, When reservation of picture recording is assigned by the same recording means so that there may be no time duplication, and said demand cannot be processed, referring to the request to print out files which is already contained in the reservation storage means, it requests in order to fill a demand to other recording controllers through a recording request means. A recording request means gives a recording demand to other recording controllers, referring to a memory measure. According to a reservation storage means, a recording execution commanding means sends a recording command to a recording means, and realizes reservation of picture recording.
0011
Example
(Working example 1) One working example of this invention is described below, referring to Drawings. It is a video storage means which is accumulated **which is accumulated and records an image and voice data 12a-12n** , and is reproduced in drawing 1, For example, the accumulation means which accumulates an analog signal like well-known VTR or optical-magnetic disc equipment, the digital VTR which outputs, inputs and accumulates a digital signal, and digital optical-magnetic disc equipment may be used,

and the video storage means only for playback still like a laser disc or CD-ROM may be sufficient.

001214a-14n are monitors which display the image of said video storage means and carry out **sound** sound-reinforcement. 11 is an image means of exchange which sends the image which the video storage means 12a-12n output, and an audio signal to other video storage means 12a-12n or the monitors 14a-14n, The image means of exchange which it is desirable that two or more images can be transmitted simultaneously, for example, transmits a baseband video voice signal with frequency-division multiplex, Or they are an image means of exchange which consists of a well-known CODEC device and ISDN exchange network, or an image means of exchange by a matrix switcher.

001313a-13n are the storage controlling parts which control the corresponding video storage means 12a-12n, and 15a-15n are monitor control sections which control the corresponding monitors 14a-14n. The one storage controlling part 13 may control two or more accumulation means.

001416 is the visual recording Management Department which manages the visual recording accumulated in the video storage means 12a-12n, and it is desirable to memorize and update the information about the name and the whereabouts of visual recording, and to also memorize and update information, including the date updated preferably, an owner, a reproduction right, the right of recording / elimination, etc. 10 is a wording-of-a-telegram transmission means which transmits the wording of a telegram exchanged between the storage controlling parts 13a-13n, the monitor control sections 15a-15n, and the visual recording Management Department 16, is public networks, such as the computers LAN and ISDN, a packet exchange network, etc., for example, and only calls LAN hereafter.

0015 Computers, such as a workstation, a personal computer, and a game machine, may be satisfactory for said control sections 13a-13n and 15a-15n and the Management Department 16. The video storage means 12a-12n and the monitors 14a-14n should just be distributed on the image means of exchange 11, and that of the physical relationship are free. Similarly, the storage controlling parts 13a-13n, the visual recording Management Department 16, and the monitor control sections 15a-15n are distributed on LAN10, and there are no restrictions in physical relationship.

0016 Visual recording is managed for every unit of a video file, and one video file consists of 0 - two or more image frames, and exists, for example on a recording medium like videotape or an optical disc. The visual recording Management Department 16 remembers that the whereabouts of said all video files explains below to the video management table of drawing 3.

0017A video management table assigns and memorizes the key of a meaning to each video file, and remembers the section in the medium to be a medium name in which each video file exists. The section in a medium is the information that it is from what frame when a frame number is shaken from the head of a medium to what frame. This video management table has memorized the free space on a medium similarly.

0018 The visual recording Management Department 16 has a device-management table shown in drawing 4 which memorizes the condition of use of the storage name and device which all the video storage means 12a-12n and each accumulation means carry.

0019 The monitor control sections 15a-15n which control each monitor have memorized the video table respectively shown in drawing 2. This video table has memorized the list of the video files which can be accessed from the monitor control section 15 which memorizes a table, made the pair the key for accessing the name of a video file, and a video file, and is memorized.

0020 The contents of the video file memorized every monitor control section 15 differ, and the user of other monitors can be prevented from accessing other users' video file freely. It is also possible to apply so that the video file which memorized such a video table at the visual recording Management Department 16, and appears in the table from all the monitors can be accessed.

0021 About said composition, the operation is explained below. The main operations of the distributed recording device of this example are playback of video voice data, recording, a copy, and erasing operation, and as other operations, There is operation

which replaces the recording medium which said video storage means 12 carries, for example, the cassette inserted in VTR, or operation about registration and deletion of the video storage means 12 and its control section 13, and these are explained below.

0022 Reproduction of a video file is explained first. When a "error" as used in the field of below occurs, the negative acknowledge which included the error generation factor preferably shall be replied.

0023 The case where a user plays the video file "StarWars" of said video table is considered. A user chooses said video file using the monitor control section 15. The control section 15 obtains the key of an applicable video file, and "OP3C2D 2R" with reference to a video table. The monitor control section 15 transmits the "open wording of a telegram" of the video file which contained this key to the visual recording Management Department 16 by LAN10 course.

0024 The visual recording Management Department 16 receives and compares said open wording of a telegram with the key of the memorized video management table. It is an error when it cannot compare. When collation is successful, with reference to the device-management table which has memorized the corresponding medium name at the key at the visual recording Management Department 16, the device address of the storage device carrying an applicable medium and the condition of use of a device are acquired. Here, a device is a device in which concurrent access is impossible, and it is an error when it is under use. Or it is an error when neither of the devices carries the target medium.

0025 When it is not an error, the Management Department 16 transmits the "key wording of a telegram" having contained the frame number which shows the device address of a recording device, and the section in a medium to the monitor control section 15 with a demand. The condition of use of an applicable device is set "during reproduction."

0026 The monitor control section 15 displays this on the monitor 14, when the negative acknowledge by error is received, and it ends reproduction motion. The monitor control section 15 will transmit "reproduction wording of a telegram" by LAN10 course to the storage controlling part 13 of the storage device described by wording of a telegram, if key wording of a telegram is received. With "playback" here, video recovery commands of well-known, such as search, a rapid traverse, rewinding, slow reproduction, fast forwarding reproduction, and a halt, are included. However, the monitor control section 15 transmits said reproduction wording of a telegram so that it may not deviate from the "section" of the video file contained in said key wording of a telegram. It prevents accessing fields other than a video file by this, for example, is preventing from accessing it unlawfully at other users' video file.

0027 The monitor control section 15 precedes sending the first reproduction wording of a telegram, to the image means of exchange 11, it sends a requirement signal so that the image from the target storage device may be transmitted to a monitor, and it establishes image connection. The storage controlling part 13 receives the reproduction wording of a telegram sent from LAN10, a suitable control signal is sent to the video storage means 12, and an image is reproduced. A reproduced image is displayed on the monitor 14 via an image means of exchange.

0028 When a user wants to resign reproduction of a video file, a user inputs a cease and desist order into the monitor control section 15. The monitor control section 15 transmits "stop wording of a telegram" to the storage controlling part 13 of the device currently reproduced, A requirement signal is sent to the image means of exchange 11 so that the image connection with the monitor from a storage device may be cut, and the "closing wording of a telegram" which contained said key corresponding to a video-file name to the visual recording Management Department 16 is transmitted.

0029 The storage controlling part 13 which received said stop wording of a telegram sends a halt control signal to the video storage means 12, and stops reproduction. The image means of exchange 11 which received the signal which requires image cutting cuts the image connection from the video storage means 12 to the monitor 14.

0030 The visual recording Management Department 16 which received said closing wording of a telegram sets the condition of use of a device to an "empty" state with

reference to a device-management table in the same operation as the time of receiving open wording of a telegram. Reproduction motion is completed above.

0031 In the case of the device which allows two or more users, if the number of users is memorized with condition of use and the number of users which increases the number of users one, performs operation of reducing by one at the time of closing, at the time of opening, and can be permitted on a device-management table is also memorized, It can prevent a device being accessed by the number of users beyond tolerance. Also in other monitors, the same video file can be accessed by exchanging the key information on a video file and suiting in monitor control section 15a-15n.

0032 The video table 20 is memorized also in the visual recording Management Department 16, and if a video file to share between all the monitors here is memorized, these video files can be accessed from all the users.

0033 Next, the operation at the time of video-file recording is explained. A user also inputs a medium name, when specifying further, the length of the video file which wishes to record by the monitor control section 15, a name, and. To the visual recording Management Department 16, the monitor control section 15 transmits the "blank quota wording of a telegram" included medium name information, when there is specification, the length of a video file, and.

0034 If said blank quota wording of a telegram is received, it searches the field which fills the size of a demand enough with reference to the free space memorized to the video management table, and the visual recording Management Department 16 will publish a new key, when it succeeds in search, and will register with a video management table as a video file. The wording of a telegram included a storage device, a medium name, and the section information in a medium is answered to the monitor control section 15 as a key. It is an error when free space cannot be searched.

0035 The monitor control section 15 will register this key into a video table with a video-file name, if said reply is received. When the medium is carried in the storage device, it can record like the operation in playback by making image connection with other video devices on the image means of exchange 11, for example, a video camera etc.

0036 When the medium is not carried in a storage device and it can record on the medium using other recording means, the section information in the medium sent from the visual recording Management Department 16 can be recorded on a key. When transmitting blank quota wording of a telegram, it is desirable that it can be required that the medium always carried in the device should be assigned.

0037 Operation of a copy can be carried out by combining reproduction motion and recording operation. The copy between the media which use together and wish operation of exchange of the recording medium explained later is possible.

0038 Although the wording of a telegram for controlling accumulation means, such as reproduction wording of a telegram and stop wording of a telegram, by this example of operation was directly transmitted to the video storage means 12 from the monitor control section 15, The indirect method of once sending out these wording of a telegram to the visual recording Management Department 16 instead, and sending out the wording of a telegram for controlling the accumulation means 12 from the visual recording Management Department 16 to the accumulation means 12 is also considered. However, since the direction transmitted directly **above-mentioned** can reduce the load to the visual recording Management Department 16, it is desirable.

0039 Next, elimination of a video file is explained. A video-file name to eliminate in the monitor control means 15 is inputted. The monitor control means 15 creates the open wording of a telegram in reproduction, and the elimination wording of a telegram which contained similarly the key which points out a video file, and transmits to the visual recording Management Department 16.

0040 The visual recording Management Department 16 which received said elimination wording of a telegram erases registration of a video file applicable with reference to a video management table, and memorizes as free space.

0041 Next, the operation in exchange of the recording medium which a storage device carries is explained. When it carries a registered recording medium in a registered storage device, the monitor control section 15 creates the medium name which a user

inputs, and "loading wording of a telegram" having included the device address, and transmits to the visual recording Management Department 16. The visual recording Management Department 16 makes the loading relation to the device of the medium of said loading wording of a telegram reflect in a device-management table.

0042 Next, the operation which registers a new recording medium is explained. The "medium registration wording of a telegram" included the classification of the method of the medium name, the length and the beta to register, VHS, etc. is created by the monitor control section 15, this is transmitted to the visual recording Management Department 16, and the visual recording management Management Department 16 receives said medium registration wording of a telegram, and memorizes as free space to a video management table. Registration cancellation of a medium can be performed similarly. In this case, since the management information of the video file on a medium is canceled, it becomes impossible accessing these video files.

0043 Next, the operation which registers a new accumulation means is explained. Sending storage device registration wording of a telegram having included the address of classification and a storage device to the visual recording Management Department 16 like the time of new medium registration, the visual recording Management Department 16 which received this registers a new device into a device-management table.

0044 The distributed recording device which can access the image of two or more video storage means distributed from each monitor distributed as mentioned above is realized.

0045 Although explained as recording playback of a video voice signal, An audio signal is similarly accumulated in the sound recording device distributed on the network, and the composition played by monitor, or the composition which is accumulated in the accumulation means which had Still Picture Sub-Division distributed, and displays this by monitor or the composition which combined these can be easily guessed from this invention.

0046(Working example 2) The 2nd working example of this invention is described. The 2nd working example targets a home video recording device. In drawing 5, 50 is a house and 51 is friend's house. The expression a "house" and "friend's house" is the name on expedient of explanation, and the embodiment of an invention is not limited to this. The house 50 and friend's house 51 were provided with the terrestrial wave or the satellite dish 55, it has 1 or home VTR52 of two or more well-known, and such VTRs are controlled by the control means 53a and 53b of this invention explained below.

0047 It is connected to the public telephone network 54, and the control means 53a of the house 50 and the control means 53b of friend's house 51 can communicate now mutually so that it may explain below.

0048 The composition of the control means 53 is explained using drawing 6. 67 is a remote control and it is used for a user sending instructions to the control means 53. 65 is a remote control light sensing portion, it is received here and the instructions from the remote control 67 reach CPU61. 61 is CPU which controls the request-to-print-out-files controller 69, the recording request part 70, and the telephone directory 64 by the instructions from a remote control.

004969 is a request-to-print-out-files controller which compares a registered timed recording request to print out files with the new timed recording reservation request inputted by the CPU61 course from the remote control 67 or the recording request part 70 at the request-to-print-out-files storage parts store 63, and plans and sets up a request to print out files of a timed recording table.

005070 receives the recording request demand from the remote control 67 or the request-to-print-out-files controller 69, It is a recording request part which receives the recording request wording of a telegram which outputted the recording request wording of a telegram later mentioned to friend's house 51 by telephone I/F62 course with reference to the telephone directory 64, or has been similarly sent from friend's house 51, and outputs a timed recording demand to the request-to-print-out-files controller 69 by CPU61 course.

005162 is a telephone I/F part for the recording request part 70 to exchange wording of a telegram via a telephone network, and is a well-known modem for a telephone for example. 63 is a request-to-print-out-files storage parts store which memorizes the

reservation content of program recording, is recorded on picture recording times, a channel, and which VTR, or memorizes recording mode. 68 is a recording execution commanding part which outputs control signals, such as a recording start and a recording end, to VTR52 connected with the request-to-print-out-files storage parts store 63 according to the time and the reservation content which are acquired from the clock 71.

0052 The residue which said recording execution commanding part 68 can record **of the tape inserted in VTR52 connected**, Although it is desirable that quality can be detected, when a tape is inserted, it is desirable to enable it to refer to it, when that may be notified with the remote control 67, this information is memorized in the request-to-print-out-files storage parts store 63 and reservation of picture recording is set up.

0053VTR52 is connectable with cable TV and broadcast inside a hall in addition to a terrestrial wave or satellite broadcasting. Transmission of the control signal from the control means 53 to VTR uses the control line, and also may use infrared remote control signals and computer LAN.

0054 It is desirable to give and memorize a priority for every registration as the method of registration of the telephone number to the telephone directory 64. As for the request-to-print-out-files controller 69, it is desirable to have memorized the information whether the feature for every VTR, for example, what is called satellite broadcasting, is receivable and whether it has the decoder of premium broadcast.

0055 It is also possible to refer to it, when also memorizing the characteristic of VTR of friend's house here and performing a recording request. As a recording means, accumulation, a refreshable personal computer, etc. may be used in optical-magnetic disc equipment, digital video tape recorder, and animation other than VTR.

0056 At this example, although communication of control means 53 comrades used the telephone network 54, it can also use for example, computer LAN instead of the telephone network 54. In this case, when carrying out a recording request, it becomes possible to use the broadcasting function of LAN and to perform a recording request to two or more friend's houses simultaneously, and a more nearly high-speed recording request can be performed.

0057 About said composition, the operation is explained below. At the house 50, a program recording request to print out files is performed to the control means 53 using the remote control 67. Differing from a program request to print out files of VTR of ****** is the point that the program to reserve may overlap in time.

0058CPU61 will send this to the request-to-print-out-files controller 69, if a program recording reservation request is received. With reference to the request-to-print-out-files storage parts store 63, the request-to-print-out-files controller 69 assigns a recording demand to VTR which can be reserved, and registers this into the request-to-print-out-files storage parts store 63. As for the case without directions, when VTR which can be reserved has optionality, that is displayed on the indicator 66, it can be directed on which VTR it records using the remote control 67, and being assigned automatically is desirable.

0059 It is usually desirable at the time to display the reservation content of the request-to-print-out-files storage parts store 63 on the indicator 66. When the request-to-print-out-files controller 69 memorizes the performance of VTR and assigns reservation of picture recording, operation of assigning highly efficient VTR preferentially is also possible.

0060 In addition to the programs A-C, the situation it becomes impossible to carry out reservation of picture recording of the program D further occurs as it was soon shown in drawing 7, when reservation of picture recording was put in as mentioned above. However, if drawing 7 is often observed, note that a request to print out files of the program D can newly be put in by changing the recording assignment for every VTR.

0061 For example, since it is not desirable for VTR1 to interrupt and carry out the program A under recording when the demand of the reservation of picture recording of the program D is during the recording operation of the program A, the request-to-print-out-files controller 69, A request to print out files of the program D is assigned to VTR2 by assigning the program B which has not carried out a recording start yet to VTR1, and assigning the program C to VTR2.

0062 However, even if it carries out by the above operation in a request-to-print-out-files controller, when the program reservation request which it cannot finish filling occurs, according to the following operations, recording will be automatically requested from VTR of friend's house 51.

0063 Via CPU61, the recording request part 70 is ordered the request-to-print-out-files controller 69 so that a recording request may be carried out in friend's house. The password and the sub-address are beforehand registered into the telephone directory 64 of the control means 53a of the house 50 using the remote control 67 as desirably as the telephone number of two or more friend's houses including friend's house 51. The recording request part 70 searches the highest friend's house 51 of a priority with reference to the telephone directory 64, and telephones it to friend's house 51 via telephone I/F.

0064 It will answer automatically and the control means 53b of friend's house 51 will transmit a reply signal to the control means 53a as a proof which answered, if the number of times of call origination set up beforehand is exceeded. When the ISDN network is used as a telephone line, the recording device of friend's house can be specified and called by attaching and carrying out call origination of the sub-address which specifies a recording device.

0065 The control means 53a of a house will transmit the password on which it decided beforehand as desirably as the telephone number of a house to the control means 53b, if the response from the control means 53b of friend's house is checked.

0066 The recording request part of the control means 53b of friend's house compares said telephone number and a password with reference to a telephone directory. When collation goes wrong, it is judged as illegal access, a negative response signal is transmitted to the house control means 53a, and a telephone line is disconnected. It is also possible to memorize that said illegal access occurred in the control means 53b of friend's house, and to display on the indicator 66. When it succeeds in collation, access from the control means 53a of the house 50 shall be permitted, and a normal response signal is transmitted to the control means 53a of a house.

0067 The recording request part 70 of the control means 53a of a house will perform the following recording requests, if the aforementioned normal response signal is received. When a negative response signal is received, a warning message is displayed on the indicator 66, high friend's house of a priority is searched in the telephone directory 64 next, and request operation is repeated.

0068 The recording request part 70 of the control means 53a of a house transmits the recording request wording of a telegram which included recording quality information as desirably as the hour entry of a program and channel information which carry out a recording request to the control means 53b of friend's house 51.

0069 The control means 53b of friend's house receives said wording of a telegram, and sends the recording demand to the request-to-print-out-files controller 69. The request-to-print-out-files controller 69 is the same operation as the above-mentioned which the control means 53a of the house 50 performed, and tries to fill a recording demand. When filling is possible, a normal response is transmitted to the house 50, and a negative acknowledge is transmitted when impossible.

0070 The control means 53a of the house 50 displays that on the indicator 66, when said operation receives a normal response, and it disconnects a telephone. When a negative acknowledge is received, high friend's house of a priority is searched in the telephone directory 64 next, and recording request operation is repeated. Even if it requests all friend's houses registered into the telephone directory 64, when a recording request is not received, the applicable program cannot carry out a recording request and displays that on the indicator 66.

0071 Recording became possible automatically by recording dispersively the program with which time overlaps as mentioned above about the program which was not able to be recorded with VTR used with an independent simple substance like before.

0072 When using computer LAN instead of the telephone network 54 as mentioned above, the telephone directory 64 carries out address memory instead of a telephone number. When carrying out a recording request to friend's house, the wording of a

telegram which broadcast the recording request to specific friend's house, and was preferably replied to it to the group of limited friend's house on LAN or all friend's houses on LAN rather than having requested respectively is referred to, With reference to said degree of burden, operation of becoming final and conclusive a recording request to suitable friend's house is performed preferably. By this, a recording request can be performed by the number of times of a request smaller than the case where a telephone network is used.

0073 Since it is troubled, it is convenient that a request to print out files enters VTR automatically during use for a playback use, if alarm is displayed on the indicator 66 or you emit an alarm sound, when the recording execution commanding part 68 detects the reproduction state of VTR desirably and reservation of picture recording is assigned to VTR under playback.

0074 Recording is performed by a control signal being sent to VTR52 by the recording execution commanding part 68 by the timer operation according **the program reserved by the request-to-print-out-files storage parts store 63 as mentioned above** to the clock 71.

0075 Thus, by carrying out coordination operation of two or more VTRs which were operating with the independent simple substance using the control means of this invention conventionally, VTR of the limited number can be used effectively and program recording capability can be heightened.

0076 Even if it lacks the telephone directory 64, the recording request part 70, and telephone I/F62 among said components, it cannot be overemphasized that coordination operation of two or more VTR52a-52n VTRs of a house can be carried out because the recording request to friend's house uses this invention of the thing which becomes impossible, and VTR can be used effectively.

0077(Working example 3) As long as in addition to the 2nd working example after timed recording execution does not eliminate this request to print out files but a storage capacity allows it by making this into a recording history, the case where it memorizes to the request-to-print-out-files storage parts store 63 is explained.

0078 If it is ordered the recording demand to the past program with the remote control 67 as a case of reservation of picture recording of being special, as operation in this case and there is a recording history by the control means 53a of a house, If this can be displayed on the indicator 66, a possibility that the visual recording of an applicable program exists in a house can be shown and there is nothing to the recording history of the house 50, a recording history can be asked to friend's house 51 in the same operation as a recording request.

0079 If the recording history of an applicable program exists in friend's house, that I may have the visual recording of an applicable program provided from friend's house 51 understands by receiving a notice for that. That is, the list of friend's house which recorded the applicable program automatically can be obtained by asking a recording history like a recording request, and a possibility that the target program can be obtained also about the past program can be extended.

0080 It can answer **whether the applicable program has been eliminated and** using the visual recording control mechanism of VTR which manages visual recording using a publicly known bar code by memorizing in accordance with correspondence of the bar code of a recording history and visual recording.

0081(Working example 4) In the 2nd working example, in addition, when receiving a recording request in friend's house 51, Instead of only transmitting a normal response, one working example of the distributed recording device of this invention which was provided with the request-to-print-out-files controller which asks for the "degree of burden" explained below, and was provided with the recording request part which exchanges a recording request for this at a key is described.

0082"The degree of burden" is the degree of burden concerning friend's house 51, in order to realize the recording demand from the house 50. First of all, since a setting variation is unnecessary in friend's house 51 when recording including the contents of the recording demand is set as friend's house 51, it becomes the degree 0 of burden. Although a recording demand is filled, when you do not need change of recording

assignment and it can fill a demand by change of assignment of the degree 1 of burden, and recording, it is the degree 2 of burden, and the value is calculated by the request-to-print-out-files controller 69. When there is a recording request from large number of people to one program, it is good to consider the time and effort which lends a friend a tape behind, and to evaluate the degree of burden highly.

0083 The recording request part of the control means 53a of the house 50 to which the degree of burden was notified as mentioned above can choose whether a recording request is become final and conclusive or a recording request is carried out to another friend's house according to the degree of burden. By this, the recording request which considered the burden placed on friend's house can be performed, and coordination operation of a recording device can be performed at a less burden.

(Working example 5) When a recording request is received in addition to the 4th working example, the contents of recording and working example of a distributed recording device which memorizes the degree of burden desirably to the request-to-print-out-files storage parts store 63 or the telephone directory 64 are explained to be the recording request Lords.

0084 In the request-to-print-out-files storage parts store 63, the recording request Lord is remembered for every VTR or every picture recording program. For example, when a tape is picked out from VTR after a recording end, the list of the request Lord who requested the program currently recorded on the tape is displayed on the indicator 66.

0085 The list of the request Lord who should lend the tape included in VTR by the above operation can be obtained, and it becomes convenient to lend a tape.

0086 The operation which memorizes a recording request for every request Lord in the telephone directory 64, totals said recording request periodically by CPU61, calculates the quantity of a request by considering the degree of burden desirably, and displays the result on the indicator 66 is also possible.

0087 By such operation, a compensation can be required according to the quantity and the degree of burden of a recording request of the request Lord.

(Working example 6) In addition to the 5th working example, at least one in VTR52a-52n inputs the baseband image and audio signal from other VTRs, and it explains the composition which chooses the video voice from other VTRs by the instructions from a recording execution commanding part, and can be recorded. Said VTR for recording is called master VTR below.

0088 It can create by carrying out dubbing compilation of the loan tape for lending and passing the recording request Lord by such composition, so that it may explain below.

0089 It is inputted into CPU61 of which request Lord a loan tape is created with the remote control 67. CPU61 directs to assemble the schedule which performs said request Lord's loan tape creation to the request-to-print-out-files controller 69. The request-to-print-out-files controller 69 carries out scheduling of the loan tape preparing work with reference to the request-to-print-out-files storage parts store 63.

0090 Although the program which the recording request Lord requested exists ranging over two or more VTRs and this is dubbed on master VTR, don't collide with the reservation of picture recording of VTR influenced according to this dubbing work. Scheduling is performed confirming whether such a collision occurs. Its things are desirable, when the reservation of picture recording included in especially master VTR is assigned to other VTRs as much as possible and is intensively used for dubbing work. When it cannot afford to do dubbing work, that is displayed on the indicator 66.

0091 When it succeeds in scheduling, that is displayed on the indicator 66, and it is displayed that the tape which lends out further and turns into a tape is set to master VTR. If a tape is set, a creation start is directed with the remote control 67.

0092 The schedule of dubbing is memorized by the request-to-print-out-files storage parts store 63 by said scheduling operation, and the recording execution commanding part 68 sends playback, reproduction instruction, and directions of recording and VTR selection on master VTR to VTR according to a schedule.

0093 It may be necessary to dub the visual recording on the tape which was contained in master VTR from the first. In this case, in order to dub this tape, it is necessary to reset to other VTRs, and directions of tape exchange are displayed on the indicator 66, and a

tape is replaced with a help. As for such work, since it is troublesome, when dubbing, it is desirable to carry out scheduling so that master VTR may not perform recording by request as much as possible.

0094 Recording is unnecessary, and if he is a program which records by the recording request from a friend, he is good to lend out from the start and to record on a tape. The time and effort of dubbing can also be saved by carrying out like this, and the image quality deterioration by dubbing is also avoided.

0095 Compared with the case where an exclusive tape is not created, it is released from the inconvenience that the tape cannot be appreciated during a loan, and the inconvenience of lending out to the program besides the request in a tape, by creating the loan tape only for recording request main as mentioned above, and lending out, or transferring.

0096 When there is an image means of exchange which transmits a video voice signal between a house and friend's house, it cannot be overemphasized that it can transmit to friend's house through said transmission means after recording the program by which the recording request was carried out, and the time and effort of lending out a tape can be saved, and a more desirable result is obtained.

0097

Effect of the Invention The device which can share and use such recording devices and visual recording among two or more users can be provided by distributing two or more recording devices on a network as mentioned above, and forming the mechanism in which these are operated cooperatively.

Industrial Application This invention Television broadcasting, cable TV, broadcast inside a hall, CCTV, It is related with the video-file server and recording controller which record video voice signals, such as karaoke, with the recording device distributed on the network and with which a user shares and uses these visual recording and recording devices from the distributed monitor.

Description of the Prior Art Installing on a network the video-file server which accumulates visual recording and is reincarnated, as shown in drawing 8 from the former, the art of sharing the visual recording on a server among two or more users exists. This is the device of playing the visual recording on the video-file server which is a center device from a viewer terminal, or recording the video voice signal from a viewer terminal on a server.

0003 As shown in drawing 9 from the former, there is VTR which performs a program recording request to print out files using a telephone line. Such VTR is installed in a home etc., it is connected with the telephone line, and a user used to say that he can perform reservation of picture recording on VTR of a house by remote control by a tone signal from the telephone of a place where one has gone.

Effect of the Invention The device which can share and use such recording devices and visual recording among two or more users can be provided by distributing two or more recording devices on a network as mentioned above, and forming the mechanism in which these are operated cooperatively.

FunctionFor the video-file server by the above-mentioned composition, the access request to the visual recording from a monitor control means is sent to a visual recording management tool by a wording-of-a-telegram transmission means, A visual recording

management tool retrieves the information showing the whereabouts of said visual recording, and the wording of a telegram showing the whereabouts of visual recording is sent to said monitor control means by said wording-of-a-telegram transmission means, A monitor control means sends a requirement signal to an image means of exchange so that the image connection between the video storage means and monitor which carry the target visual recording for the information showing the aforementioned whereabouts in a key may be established, and it sends operating instructions, such as reproduction of the visual recording of hope, to a storage control means.

0010 Receive the recording controller of the above-mentioned composition and a reservation-of-picture-recording demand a request-to-print-out-files adjustment device, When reservation of picture recording is assigned by the same recording means so that there may be no time duplication, and said demand cannot be processed, referring to the request to print out files which is already contained in the reservation storage means, it requests in order to fill a demand to other recording controllers through a recording request means. A recording request means gives a recording demand to other recording controllers, referring to a memory measure. According to a reservation storage means, a recording execution commanding means sends a recording command to a recording means, and realizes reservation of picture recording.

Example

(Working example 1) One working example of this invention is described below, referring to Drawings. It is a video storage means which is accumulated **which is accumulated and records an image and voice data 12a-12n** , and is reproduced in drawing 1, For example, the accumulation means which accumulates an analog signal like well-known VTR or optical-magnetic disc equipment, the digital VTR which outputs, inputs and accumulates a digital signal, and digital optical-magnetic disc equipment may be used, and the video storage means only for playback still like a laser disc or CD-ROM may be sufficient.

001214a-14n are monitors which display the image of said video storage means and carry out **sound** sound-reinforcement. 11 is an image means of exchange which sends the image which the video storage means 12a-12n output, and an audio signal to other video storage means 12a-12n or the monitors 14a-14n, The image means of exchange which it is desirable that two or more images can be transmitted simultaneously, for example, transmits a baseband video voice signal with frequency-division multiplex, Or they are an image means of exchange which consists of a well-known CODEC device and ISDN exchange network, or an image means of exchange by a matrix switcher.

001313a-13n are the storage controlling parts which control the corresponding video storage means 12a-12n, and 15a-15n are monitor control sections which control the corresponding monitors 14a-14n. The one storage controlling part 13 may control two or more accumulation means.

001416 is the visual recording Management Department which manages the visual recording accumulated in the video storage means 12a-12n, and it is desirable to memorize and update the information about the name and the whereabouts of visual recording, and to also memorize and update information, including the date updated preferably, an owner, a reproduction right, the right of recording / elimination, etc. 10 is a wording-of-a-telegram transmission means which transmits the wording of a telegram exchanged between the storage controlling parts 13a-13n, the monitor control sections 15a-15n, and the visual recording Management Department 16, is public networks, such as the computers LAN and ISDN, a packet exchange network, etc., for example, and only calls LAN hereafter.

0015 Computers, such as a workstation, a personal computer, and a game machine, may be satisfactory for said control sections 13a-13n and 15a-15n and the Management Department 16. The video storage means 12a-12n and the monitors 14a-14n should just be distributed on the image means of exchange 11, and that of the physical relationship are free. Similarly, the storage controlling parts 13a-13n, the visual recording

Management Department 16, and the monitor control sections 15a-15n are distributed on LAN10, and there are no restrictions in physical relationship.

0016 Visual recording is managed for every unit of a video file, and one video file consists of 0 - two or more image frames, and exists, for example on a recording medium like videotape or an optical disc. The visual recording Management Department 16 remembers that the whereabouts of said all video files explains below to the video management table of drawing 3.

0017A video management table assigns and memorizes the key of a meaning to each video file, and remembers the section in the medium to be a medium name in which each video file exists. The section in a medium is the information that it is from what frame when a frame number is shaken from the head of a medium to what frame. This video management table has memorized the free space on a medium similarly.

0018 The visual recording Management Department 16 has a device-management table shown in drawing 4 which memorizes the condition of use of the storage name and device which all the video storage means 12a-12n and each accumulation means carry.

0019 The monitor control sections 15a-15n which control each monitor have memorized the video table respectively shown in drawing 2. This video table has memorized the list of the video files which can be accessed from the monitor control section 15 which memorizes a table, made the pair the key for accessing the name of a video file, and a video file, and is memorized.

0020 The contents of the video file memorized every monitor control section 15 differ, and the user of other monitors can be prevented from accessing other users' video file freely. It is also possible to apply so that the video file which memorized such a video table at the visual recording Management Department 16, and appears in the table from all the monitors can be accessed.

0021 About said composition, the operation is explained below. The main operations of the distributed recording device of this example are playback of video voice data, recording, a copy, and erasing operation, and as other operations, There is operation which replaces the recording medium which said video storage means 12 carries, for example, the cassette inserted in VTR, or operation about registration and deletion of the video storage means 12 and its control section 13, and these are explained below.

0022 Reproduction of a video file is explained first. When a "error" as used in the field of below occurs, the negative acknowledge which included the error generation factor preferably shall be replied.

0023 The case where a user plays the video file "StarWars" of said video table is considered. A user chooses said video file using the monitor control section 15. The control section 15 obtains the key of an applicable video file, and "OP3C2D 2R" with reference to a video table. The monitor control section 15 transmits the "open wording of a telegram" of the video file which contained this key to the visual recording Management Department 16 by LAN10 course.

0024 The visual recording Management Department 16 receives and compares said open wording of a telegram with the key of the memorized video management table. It is an error when it cannot compare. When collation is successful, with reference to the device-management table which has memorized the corresponding medium name at the key at the visual recording Management Department 16, the device address of the storage device carrying an applicable medium and the condition of use of a device are acquired. Here, a device is a device in which concurrent access is impossible, and it is an error when it is under use. Or it is an error when neither of the devices carries the target medium.

0025 When it is not an error, the Management Department 16 transmits the "key wording of a telegram" having contained the frame number which shows the device address of a recording device, and the section in a medium to the monitor control section 15 with a demand. The condition of use of an applicable device is set "during reproduction."

0026 The monitor control section 15 displays this on the monitor 14, when the negative acknowledge by error is received, and it ends reproduction motion. The monitor control section 15 will transmit "reproduction wording of a telegram" by LAN10 course to the

storage controlling part 13 of the storage device described by wording of a telegram, if key wording of a telegram is received. With "playback" here, video recovery commands of well-known, such as search, a rapid traverse, rewinding, slow reproduction, fast forwarding reproduction, and a halt, are included. However, the monitor control section 15 transmits said reproduction wording of a telegram so that it may not deviate from the "section" of the video file contained in said key wording of a telegram. It prevents accessing fields other than a video file by this, for example, is preventing from accessing it unlawfully at other users' video file.

0027 The monitor control section 15 precedes sending the first reproduction wording of a telegram, to the image means of exchange 11, it sends a requirement signal so that the image from the target storage device may be transmitted to a monitor, and it establishes image connection. The storage controlling part 13 receives the reproduction wording of a telegram sent from LAN10, a suitable control signal is sent to the video storage means 12, and an image is reproduced. A reproduced image is displayed on the monitor 14 via an image means of exchange.

0028 When a user wants to resign reproduction of a video file, a user inputs a cease and desist order into the monitor control section 15. The monitor control section 15 transmits "stop wording of a telegram" to the storage controlling part 13 of the device currently reproduced, A requirement signal is sent to the image means of exchange 11 so that the image connection with the monitor from a storage device may be cut, and the "closing wording of a telegram" which contained said key corresponding to a video-file name to the visual recording Management Department 16 is transmitted.

0029 The storage controlling part 13 which received said stop wording of a telegram sends a halt control signal to the video storage means 12, and stops reproduction. The image means of exchange 11 which received the signal which requires image cutting cuts the image connection from the video storage means 12 to the monitor 14.

0030 The visual recording Management Department 16 which received said closing wording of a telegram sets the condition of use of a device to an "empty" state with reference to a device-management table in the same operation as the time of receiving open wording of a telegram. Reproduction motion is completed above.

0031 In the case of the device which allows two or more users, if the number of users is memorized with condition of use and the number of users which increases the number of users one, performs operation of reducing by one at the time of closing, at the time of opening, and can be permitted on a device-management table is also memorized, It can prevent a device being accessed by the number of users beyond tolerance. Also in other monitors, the same video file can be accessed by exchanging the key information on a video file and suiting in monitor control section 15a-15n.

0032 The video table 20 is memorized also in the visual recording Management Department 16, and if a video file to share between all the monitors here is memorized, these video files can be accessed from all the users.

0033 Next, the operation at the time of video-file recording is explained. A user also inputs a medium name, when specifying further, the length of the video file which wishes to record by the monitor control section 15, a name, and. To the visual recording Management Department 16, the monitor control section 15 transmits the "blank quota wording of a telegram" included medium name information, when there is specification, the length of a video file, and.

0034 If said blank quota wording of a telegram is received, it searches the field which fills the size of a demand enough with reference to the free space memorized to the video management table, and the visual recording Management Department 16 will publish a new key, when it succeeds in search, and will register with a video management table as a video file. The wording of a telegram included a storage device, a medium name, and the section information in a medium is answered to the monitor control section 15 as a key. It is an error when free space cannot be searched.

0035 The monitor control section 15 will register this key into a video table with a video-file name, if said reply is received. When the medium is carried in the storage device, it can record like the operation in playback by making image connection with other video devices on the image means of exchange 11, for example, a video camera etc.

0036 When the medium is not carried in a storage device and it can record on the medium using other recording means, the section information in the medium sent from the visual recording Management Department 16 can be recorded on a key. When transmitting blank quota wording of a telegram, it is desirable that it can be required that the medium always carried in the device should be assigned.

0037 Operation of a copy can be carried out by combining reproduction motion and recording operation. The copy between the media which use together and wish operation of exchange of the recording medium explained later is possible.

0038 Although the wording of a telegram for controlling accumulation means, such as reproduction wording of a telegram and stop wording of a telegram, by this example of operation was directly transmitted to the video storage means 12 from the monitor control section 15, The indirect method of once sending out these wording of a telegram to the visual recording Management Department 16 instead, and sending out the wording of a telegram for controlling the accumulation means 12 from the visual recording Management Department 16 to the accumulation means 12 is also considered. However, since the direction transmitted directly **above-mentioned** can reduce the load to the visual recording Management Department 16, it is desirable.

0039 Next, elimination of a video file is explained. A video-file name to eliminate in the monitor control means 15 is inputted. The monitor control means 15 creates the open wording of a telegram in reproduction, and the elimination wording of a telegram which contained similarly the key which points out a video file, and transmits to the visual recording Management Department 16.

0040 The visual recording Management Department 16 which received said elimination wording of a telegram erases registration of a video file applicable with reference to a video management table, and memorizes as free space.

0041 Next, the operation in exchange of the recording medium which a storage device carries is explained. When it carries a registered recording medium in a registered storage device, the monitor control section 15 creates the medium name which a user inputs, and "loading wording of a telegram" having included the device address, and transmits to the visual recording Management Department 16. The visual recording Management Department 16 makes the loading relation to the device of the medium of said loading wording of a telegram reflect in a device-management table.

0042 Next, the operation which registers a new recording medium is explained. The "medium registration wording of a telegram" included the classification of the method of the medium name, the length and the beta to register, VHS, etc. is created by the monitor control section 15, this is transmitted to the visual recording Management Department 16, and the visual recording management Management Department 16 receives said medium registration wording of a telegram, and memorizes as free space to a video management table. Registration cancellation of a medium can be performed similarly. In this case, since the management information of the video file on a medium is canceled, it becomes impossible accessing these video files.

0043 Next, the operation which registers a new accumulation means is explained. Sending storage device registration wording of a telegram having included the address of classification and a storage device to the visual recording Management Department 16 like the time of new medium registration, the visual recording Management Department 16 which received this registers a new device into a device-management table.

0044 The distributed recording device which can access the image of two or more video storage means distributed from each monitor distributed as mentioned above is realized.

0045 Although explained as recording playback of a video voice signal, An audio signal is similarly accumulated in the sound recording device distributed on the network, and the composition played by monitor, or the composition which is accumulated in the accumulation means which had Still Picture Sub-Division distributed, and displays this by monitor or the composition which combined these can be easily guessed from this invention.

0046(Working example 2) The 2nd working example of this invention is described. The 2nd working example targets a home video recording device. In drawing 5, 50 is a house and 51 is friend's house. The expression a "house" and "friend's house" is the name on

expedient of explanation, and the embodiment of an invention is not limited to this. The house 50 and friend's house 51 were provided with the terrestrial wave or the satellite dish 55, it has 1 or home VTR52 of two or more well-known, and such VTRs are controlled by the control means 53a and 53b of this invention explained below.

0047 It is connected to the public telephone network 54, and the control means 53a of the house 50 and the control means 53b of friend's house 51 can communicate now mutually so that it may explain below.

0048 The composition of the control means 53 is explained using drawing 6. 67 is a remote control and it is used for a user sending instructions to the control means 53. 65 is a remote control light sensing portion, it is received here and the instructions from the remote control 67 reach CPU61. 61 is CPU which controls the request-to-print-out-files controller 69, the recording request part 70, and the telephone directory 64 by the instructions from a remote control.

004969 is a request-to-print-out-files controller which compares a registered timed recording request to print out files with the new timed recording reservation request inputted by the CPU61 course from the remote control 67 or the recording request part 70 at the request-to-print-out-files storage parts store 63, and plans and sets up a request to print out files of a timed recording table.

005070 receives the recording request demand from the remote control 67 or the request-to-print-out-files controller 69, It is a recording request part which receives the recording request wording of a telegram which outputted the recording request wording of a telegram later mentioned to friend's house 51 by telephone I/F62 course with reference to the telephone directory 64, or has been similarly sent from friend's house 51, and outputs a timed recording demand to the request-to-print-out-files controller 69 by CPU61 course.

005162 is a telephone I/F part for the recording request part 70 to exchange wording of a telegram via a telephone network, and is a well-known modem for a telephone for example. 63 is a request-to-print-out-files storage parts store which memorizes the reservation content of program recording, is recorded on picture recording times, a channel, and which VTR, or memorizes recording mode. 68 is a recording execution commanding part which outputs control signals, such as a recording start and a recording end, to VTR52 connected with the request-to-print-out-files storage parts store 63 according to the time and the reservation content which are acquired from the clock 71.

0052 The residue which said recording execution commanding part 68 can record **of the tape inserted in VTR52 connected** , Although it is desirable that quality can be detected, when a tape is inserted, it is desirable to enable it to refer to it, when that may be notified with the remote control 67, this information is memorized in the request-to-print-out-files storage parts store 63 and reservation of picture recording is set up.

0053VTR52 is connectable with cable TV and broadcast inside a hall in addition to a terrestrial wave or satellite broadcasting. Transmission of the control signal from the control means 53 to VTR uses the control line, and also may use infrared remote control signals and computer LAN.

0054 It is desirable to give and memorize a priority for every registration as the method of registration of the telephone number to the telephone directory 64. As for the request-to-print-out-files controller 69, it is desirable to have memorized the information whether the feature for every VTR, for example, what is called satellite broadcasting, is receivable and whether it has the decoder of premium broadcast.

0055 It is also possible to refer to it, when also memorizing the characteristic of VTR of friend's house here and performing a recording request. As a recording means, accumulation, a refreshable personal computer, etc. may be used in optical-magnetic disc equipment, digital video tape recorder, and animation other than VTR.

0056 At this example, although communication of control means 53 comrades used the telephone network 54, it can also use for example, computer LAN instead of the telephone network 54. In this case, when carrying out a recording request, it becomes possible to use the broadcasting function of LAN and to perform a recording request to two or more friend's houses simultaneously, and a more nearly high-speed recording request can be performed.

0057 About said composition, the operation is explained below. At the house 50, a program recording request to print out files is performed to the control means 53 using the remote control 67. Differing from a program request to print out files of VTR of ****** is the point that the program to reserve may overlap in time.

0058CPU61 will send this to the request-to-print-out-files controller 69, if a program recording reservation request is received. With reference to the request-to-print-out-files storage parts store 63, the request-to-print-out-files controller 69 assigns a recording demand to VTR which can be reserved, and registers this into the request-to-print-out-files storage parts store 63. As for the case without directions, when VTR which can be reserved has optionality, that is displayed on the indicator 66, it can be directed on which VTR it records using the remote control 67, and being assigned automatically is desirable.

0059 It is usually desirable at the time to display the reservation content of the request-to-print-out-files storage parts store 63 on the indicator 66. When the request-to-print-out-files controller 69 memorizes the performance of VTR and assigns reservation of picture recording, operation of assigning highly efficient VTR preferentially is also possible.

0060 In addition to program A-C, the situation it becomes impossible to carry out reservation of picture recording of the program D further occurs as it was soon shown in drawing 7, when reservation of picture recording was put in as mentioned above. However, if drawing 7 is often observed, note that a request to print out files of the program D can newly be put in by changing the recording assignment for every VTR.

0061 For example, since it is not desirable for VTR1 to interrupt and carry out the program A under recording when the demand of the reservation of picture recording of the program D is during the recording operation of the program A, the request-to-print-out-files controller 69, A request to print out files of the program D is assigned to VTR2 by assigning the program B which has not carried out a recording start yet to VTR1, and assigning the program C to VTR2.

0062 However, even if it carries out by the above operation in a request-to-print-out-files controller, when the program reservation request which it cannot finish filling occurs, according to the following operations, recording will be automatically requested from VTR of friend's house 51.

0063 Via CPU61, the recording request part 70 is ordered the request-to-print-out-files controller 69 so that a recording request may be carried out in friend's house. The password and the sub-address are beforehand registered into the telephone directory 64 of the control means 53a of the house 50 using the remote control 67 as desirably as the telephone number of two or more friend's houses including friend's house 51. The recording request part 70 searches the highest friend's house 51 of a priority with reference to the telephone directory 64, and telephones it to friend's house 51 via telephone I/F.

0064 It will answer automatically and the control means 53b of friend's house 51 will transmit a reply signal to the control means 53a as a proof which answered, if the number of times of call origination set up beforehand is exceeded. When the ISDN network is used as a telephone line, the recording device of friend's house can be specified and called by attaching and carrying out call origination of the sub-address which specifies a recording device.

0065 The control means 53a of a house will transmit the password on which it decided beforehand as desirably as the telephone number of a house to the control means 53b, if the response from the control means 53b of friend's house is checked.

0066 The recording request part of the control means 53b of friend's house compares said telephone number and a password with reference to a telephone directory. When collation goes wrong, it is judged as illegal access, a negative response signal is transmitted to the house control means 53a, and a telephone line is disconnected. It is also possible to memorize that said illegal access occurred in the control means 53b of friend's house, and to display on the indicator 66. When it succeeds in collation, access from the control means 53a of the house 50 shall be permitted, and a normal response signal is transmitted to the control means 53a of a house.

0067 The recording request part 70 of the control means 53a of a house will perform the following recording requests, if the aforementioned normal response signal is received. When a negative response signal is received, a warning message is displayed on the indicator 66, high friend's house of a priority is searched in the telephone directory 64 next, and request operation is repeated.

0068 The recording request part 70 of the control means 53a of a house transmits the recording request wording of a telegram which included recording quality information as desirably as the hour entry of a program and channel information which carry out a recording request to the control means 53b of friend's house 51.

0069 The control means 53b of friend's house receives said wording of a telegram, and sends the recording demand to the request-to-print-out-files controller 69. The request-to-print-out-files controller 69 is the same operation as the above-mentioned which the control means 53a of the house 50 performed, and tries to fill a recording demand. When filling is possible, a normal response is transmitted to the house 50, and a negative acknowledge is transmitted when impossible.

0070 The control means 53a of the house 50 displays that on the indicator 66, when said operation receives a normal response, and it disconnects a telephone. When a negative acknowledge is received, high friend's house of a priority is searched in the telephone directory 64 next, and recording request operation is repeated. Even if it requests all friend's houses registered into the telephone directory 64, when a recording request is not received, the applicable program cannot carry out a recording request and displays that on the indicator 66.

0071 Recording became possible automatically by recording dispersively the program with which time overlaps as mentioned above about the program which was not able to be recorded with VTR used with an independent simple substance like before.

0072 When using computer LAN instead of the telephone network 54 as mentioned above, the telephone directory 64 carries out address memory instead of a telephone number. When carrying out a recording request to friend's house, the wording of a telegram which broadcast the recording request to specific friend's house, and was preferably replied to it to the group of limited friend's house on LAN or all friend's houses on LAN rather than having requested respectively is referred to, With reference to said degree of burden, operation of becoming final and conclusive a recording request to suitable friend's house is performed preferably. By this, a recording request can be performed by the number of times of a request smaller than the case where a telephone network is used.

0073 Since it is troubled, it is convenient that a request to print out files enters VTR automatically during use for a playback use, if alarm is displayed on the indicator 66 or you emit an alarm sound, when the recording execution commanding part 68 detects the reproduction state of VTR desirably and reservation of picture recording is assigned to VTR under playback.

0074 Recording is performed by a control signal being sent to VTR52 by the recording execution commanding part 68 by the timer operation according **the program reserved by the request-to-print-out-files storage parts store 63 as mentioned above** to the clock 71.

0075 Thus, by carrying out coordination operation of two or more VTRs which were operating with the independent simple substance using the control means of this invention conventionally, VTR of the limited number can be used effectively and program recording capability can be heightened.

0076 Even if it lacks the telephone directory 64, the recording request part 70, and telephone I/F62 among said components, it cannot be overemphasized that coordination operation of two or more VTR52a-52n VTRs of a house can be carried out because the recording request to friend's house uses this invention of the thing which becomes impossible, and VTR can be used effectively.

0077(Working example 3) As long as in addition to the 2nd working example after timed recording execution does not eliminate this request to print out files but a storage capacity allows it by making this into a recording history, the case where it memorizes to the request-to-print-out-files storage parts store 63 is explained.

0078 If it is ordered the recording demand to the past program with the remote control 67 as a case of reservation of picture recording of being special, as operation in this case and there is a recording history by the control means 53a of a house, If this can be displayed on the indicator 66, a possibility that the visual recording of an applicable program exists in a house can be shown and there is nothing to the recording history of the house 50, a recording history can be asked to friend's house 51 in the same operation as a recording request.

0079 If the recording history of an applicable program exists in friend's house, that I may have the visual recording of an applicable program provided from friend's house 51 understands by receiving a notice for that. That is, the list of friend's house which recorded the applicable program automatically can be obtained by asking a recording history like a recording request, and a possibility that the target program can be obtained also about the past program can be extended.

0080 It can answer **whether the applicable program has been eliminated and** using the visual recording control mechanism of VTR which manages visual recording using a publicly known bar code by memorizing in accordance with correspondence of the bar code of a recording history and visual recording.

0081(Working example 4) In the 2nd working example, in addition, when receiving a recording request in friend's house 51, Instead of only transmitting a normal response, one working example of the distributed recording device of this invention which was provided with the request-to-print-out-files controller which asks for the "degree of burden" explained below, and was provided with the recording request part which exchanges a recording request for this at a key is described.

0082"The degree of burden" is the degree of burden concerning friend's house 51, in order to realize the recording demand from the house 50. First of all, since a setting variation is unnecessary in friend's house 51 when recording including the contents of the recording demand is set as friend's house 51, it becomes the degree 0 of burden. Although a recording demand is filled, when you do not need change of recording assignment and it can fill a demand by change of assignment of the degree 1 of burden, and recording, it is the degree 2 of burden, and the value is calculated by the request-to-print-out-files controller 69. When there is a recording request from large number of people to one program, it is good to consider the time and effort which lends a friend a tape behind, and to evaluate the degree of burden highly.

0083 The recording request part of the control means 53a of the house 50 to which the degree of burden was notified as mentioned above can choose whether a recording request is become final and conclusive or a recording request is carried out to another friend's house according to the degree of burden. By this, the recording request which considered the burden placed on friend's house can be performed, and coordination operation of a recording device can be performed at a less burden.

(Working example 5) When a recording request is received in addition to the 4th working example, the contents of recording and working example of a distributed recording device which memorizes the degree of burden desirably to the request-to-print-out-files storage parts store 63 or the telephone directory 64 are explained to be the recording request Lords.

0084 In the request-to-print-out-files storage parts store 63, the recording request Lord is remembered for every VTR or every picture recording program. For example, when a tape is picked out from VTR after a recording end, the list of the request Lord who requested the program currently recorded on the tape is displayed on the indicator 66.

0085 The list of the request Lord who should lend the tape included in VTR by the above operation can be obtained, and it becomes convenient to lend a tape.

0086 The operation which memorizes a recording request for every request Lord in the telephone directory 64, totals said recording request periodically by CPU61, calculates the quantity of a request by considering the degree of burden desirably, and displays the result on the indicator 66 is also possible.

0087 By such operation, a compensation can be required according to the quantity and the degree of burden of a recording request of the request Lord.

(Working example 6) In addition to the 5th working example, at least one in VTR52a-52n

inputs the baseband image and audio signal from other VTRs, and it explains the composition which chooses the video voice from other VTRs by the instructions from a recording execution commanding part, and can be recorded. Said VTR for recording is called master VTR below.

0088 It can create by carrying out dubbing compilation of the loan tape for lending and passing the recording request Lord by such composition, so that it may explain below.

0089 It is inputted into CPU61 of which request Lord a loan tape is created with the remote control 67. CPU61 directs to assemble the schedule which performs said request Lord's loan tape creation to the request-to-print-out-files controller 69. The request-to-print-out-files controller 69 carries out scheduling of the loan tape preparing work with reference to the request-to-print-out-files storage parts store 63.

0090 Although the program which the recording request Lord requested exists ranging over two or more VTRs and this is dubbed on master VTR, don't collide with the reservation of picture recording of VTR influenced according to this dubbing work. Scheduling is performed confirming whether such a collision occurs. Its things are desirable, when the reservation of picture recording included in especially master VTR is assigned to other VTRs as much as possible and is intensively used for dubbing work. When it cannot afford to do dubbing work, that is displayed on the indicator 66.

0091 When it succeeds in scheduling, that is displayed on the indicator 66, and it is displayed that the tape which lends out further and turns into a tape is set to master VTR. If a tape is set, a creation start is directed with the remote control 67.

0092 The schedule of dubbing is memorized by the request-to-print-out-files storage parts store 63 by said scheduling operation, and the recording execution commanding part 68 sends playback, reproduction instruction, and directions of recording and VTR selection on master VTR to VTR according to a schedule.

0093 It may be necessary to dub the visual recording on the tape which was contained in master VTR from the first. In this case, in order to dub this tape, it is necessary to reset to other VTRs, and directions of tape exchange are displayed on the indicator 66, and a tape is replaced with a help. As for such work, since it is troublesome, when dubbing, it is desirable to carry out scheduling so that master VTR may not perform recording by request as much as possible.

0094 Recording is unnecessary, and if he is a program which records by the recording request from a friend, he is good to lend out from the start and to record on a tape. The time and effort of dubbing can also be saved by carrying out like this, and the image quality deterioration by dubbing is also avoided.

0095 Compared with the case where an exclusive tape is not created, it is released from the inconvenience that the tape cannot be appreciated during a loan, and the inconvenience of lending out to the program besides the request in a tape, by creating the loan tape only for recording request main as mentioned above, and lending out, or transferring.

0096 When there is an image means of exchange which transmits a video voice signal between a house and friend's house, it cannot be overemphasized that it can transmit to friend's house through said transmission means after recording the program by which the recording request was carried out, and the time and effort of lending out a tape can be saved, and a more desirable result is obtained.

Problem(s) to be Solved by the Invention However, it realizes as a single center device, and the conventional video-file server must be equal to the concurrent access from two or more viewer terminals, and needs an expensive and highly efficient center device. Since it was a single center device, it was difficult for a user to carry a storage medium in a server freely, without stopping a system, or to newly carry a recording medium. It will be convenient, if recording devices, such as a certain home VTR, are freely distributed on a network from the former and a user can share this.

0005 Also in what is called a communication karaoke system, although a karaoke picture is accumulated in a center device and the method of distributing this to a terminal is

taken, there are restrictions that the supply source of image software is restricted to one center device. If there are two or more image soft supply sources, for a user, the width of selection of an image will spread and it will be convenient.

0006VTR which can be operated by conventional telephone was used alone, and two or more VTRs did not carry out coordination operation mutually. The method of the program which cannot be recorded since there is a limitation in the number of VTRs owned at a house and broadcasting hours lap carrying out a recording request to a friend by a help, and recording by work sharing was taken. Since schedule control which program to record on which VTR was performed with the help even if two or more VTRs were in the house, it was easy to produce a mistake.

Means for Solving the Problem This invention solves said SUBJECT and a video-file server by this invention video voice data A display or two or more monitors which carry out sound-reinforcement, A monitor control means which inputs a command from a user and controls said monitor, Two or more video storage means which store video voice data, and a storage control means which controls said video storage means, A visual recording management tool which manages the whereabouts of visual recording on 1 or two or more recording media which are carried in said video storage means, said video storage means and said recording medium, and said recording medium, An image means of exchange which exchanges a video voice signal between said video storage means or between said monitors, Between said monitor control means, said storage control means, and said visual recording management tool, it consists of a wording-of-a-telegram transmission means which exchanges wording of a telegram, and two or more users can share two or more recording devices and visual recording in two or more monitors.

0008A memory measure which memorizes an address of other recording controllers to which a recording controller by this invention was connected via a communication line, A recording request means which performs a recording request to other recording controllers, or receives a recording request from other aforementioned recording controllers with reference to said memory measure, A reservation storage means which memorizes information, including a program etc. which should be recorded from now on, and a recording execution commanding means which directs recording execution to a recording means connected to a recording control means with reference to said reservation storage means, It is composition with a request-to-print-out-files adjustment device which sends a recording demand to a recording request means of other recording controllers to which a program recording demand was inputted into and said reservation storage means was connected via updating or a communication line.

Brief Description of the Drawings
Drawing 1 The lineblock diagram of the distributed recording device in the 1st working example of this invention
Drawing 2 The key map of the video table which the distributed recording device of this invention holds
Drawing 3 The key map of the video management table which the distributed recording device of this invention holds
Drawing 4 The key map of the device-management table which the distributed recording device of this invention holds
Drawing 5 The usage pattern figure of the distributed recording device in the 2nd working example of this invention
Drawing 6 The lineblock diagram of the distributed recording device in the 2nd working example of this invention
Drawing 7 The key map showing the situation of the request-to-print-out-files adjustment in the 2nd working example of this invention
Drawing 8 The lineblock diagram of the conventional network type recording device

Drawing 9 The lineblock diagram of the conventional remote control VTR
Description of Notations
10 Wording-of-a-telegram transmission means
11 Image means of exchange
12a Video storage means
12 n Video storage means
13a Storage controlling part
13b Storage controlling part
14a Monitor
14 n Monitor
15a Monitor control section
15b Monitor control section
16 Visual recording Management Department
50 House
51 Friend's house
52 VTR
53a Distributed recording device
53b Distributed recording device
54 Public telephone network
55 Receiving antenna
61 CPU
62 Telephone I/F
63 Request-to-print-out-files storage parts store
64 Telephone directory
65 Light sensing portion
66 Indicator
67 Remote control
68 Recording execution commanding part
69 Request-to-print-out-files controller
70 Recording request part
71 Clock
80 Video-file server
81 Accumulation means
82a Display terminal
82 n Display terminal
90 Public network
91a Telephone
91 n Telephone
92a VTR
92b VTR

Drawing 1

For drawings please refer to the original document.

Drawing 2

For drawings please refer to the original document.

Drawing 3

For drawings please refer to the original document.

Drawing 4

For drawings please refer to the original document.

Drawing 5

For drawings please refer to the original document.

Drawing 7

For drawings please refer to the original document.

Drawing 8

For drawings please refer to the original document.

Drawing 6

For drawings please refer to the original document.

Drawing 9

For drawings please refer to the original document.

For drawings please refer to the original document.